

Directions (1-60): What should come in place of question mark (?) in the following questions?

Q1. $32 \times 384 \div 3^4 \times 216 \div 2^5 = 2^?$

- (a) 7
- (b) 8
- (c) 9
- (d) 10
- (e) 6

Q2. $\sqrt{18 \times 8 + 37.5\% \text{ of } 216 - ?} = \sqrt{1444} - \sqrt{529}$

- (a) 4
- (b) 0
- (c) 6
- (d) 12
- (e) 2

Q3. $45\% \text{ of } 280 + 72\% \text{ of } 550 = 90\% \text{ of } ?$

- (a) 540
- (b) 550
- (c) 580
- (d) 600
- (e) 630



Q4. $(14^2 - 8^2) \div ? \times (7^2 - 4^2) = ? \times 400$

- (a) 33
- (b) 66
- (c) 6.6
- (d) 4.4
- (e) 3.3

Q5. $8 \frac{4}{11} \times 5 \frac{6}{23} \times \frac{8}{?} = \sqrt{484} + \sqrt{4356}$

- (a) 11
- (b) 8
- (c) 6
- (d) 4
- (e) 2

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Q6. $64 \times 198 + \frac{340}{8} \times \frac{4}{17} = ?$

- (a) 12345
- (b) 12435
- (c) 14567
- (d) 12682
- (e) None of these

Q7. $62 \div 31\% \text{ of } 200 + ? = 4$

- (a) 2
- (b) 3
- (c) 4
- (d) 5
- (e) None of these

Q8. $1728 \div 12^3 - 11^3 = ?$

- (a) -1330
- (b) -1332
- (c) -1142
- (d) -1342
- (e) None of these

Q9. $729 \times \frac{1}{9^2} - 24 \div 3\% \text{ of } 10 = ?$

- (a) -76
- (b) -70
- (c) -71
- (d) -72
- (e) None of these

Q10. $1001 \times 1120 - 1120 \times 999 + 55 = ?$

- (a) 2234
- (b) 2295
- (c) 2245
- (d) 2278
- (e) None of these

Q11. $23\frac{8}{9} + 15\frac{7}{9} - ? = 12\frac{1}{3} \times \frac{2}{3}$

- (a) $31\frac{4}{9}$
- (b) 32
- (c) $32\frac{5}{9}$
- (d) $32\frac{7}{9}$
- (e) $31\frac{8}{9}$



Q12. $16.5 \times 18 \div \sqrt{729} \times 11 + 48 = (?)^2$

- (a) 12
- (b) 14
- (c) 15
- (d) 13
- (e) 16

Q13. $4444 \div 44 + 3003 \div 3 = ? + 841$

- (a) 271
- (b) 261
- (c) 251
- (d) 281
- (e) 291

Q14. $(4080 + 5160) \div ? = 440$

- (a) 21
- (b) 25
- (c) 31
- (d) 28
- (e) 29

Q15. $? \times (623.5 + 587.5) \times 5 = 24220$

- (a) 5
- (b) 6.5
- (c) 5.5
- (d) 4.5
- (e) 4



Q16. $?^2 = 512 \div 81 \div 72 \times 2916$

- (a) 9
- (b) 12
- (c) 16
- (d) 18
- (e) 20

Q17. $\frac{9}{2} + \frac{11}{3} + \frac{17}{6} = ? + \frac{12}{5} + \frac{21}{10}$

- (a) 6
- (b) $6\frac{1}{2}$
- (c) 7
- (d) $6\frac{2}{3}$
- (e) $7\frac{1}{2}$

Q18. $5^{7-2} = (5)^5 \div (25)^3 \times (125)^2 \div 625$

- (a) -1
- (b) 0
- (c) 1
- (d) 2
- (e) 3

Q19. $? \times 65 \div 72 = 195 \times 352 \div 192$

- (a) 369
- (b) 396
- (c) 594
- (d) 297
- (e) 376

Q20. $\sqrt[2]{256} \times (1728)^{\frac{1}{3}} = ? \times (4096)^{\frac{1}{4}}$

- (a) 16
- (b) 18
- (c) 24
- (d) 28
- (e) 32

Q21. $35\% \text{ of } 180 + 18^2 = (27)^{\frac{5}{3}} + ?^2$

- (a) 16
- (b) 14
- (c) 8
- (d) 12
- (e) 18

Q22. $\frac{323}{357} \times 441 - 15 \times 21 = ?$

- (a) 84
- (b) 63
- (c) 42
- (d) 21
- (e) 105

Q23. $7\frac{4}{5} - 3\frac{2}{3} + 4\frac{8}{15} = \frac{234}{?}$

- (a) 9
- (b) 18
- (c) 27
- (d) 54
- (e) 81



Q24. $?^{\frac{2}{3}} = 64\% \text{ of } 150 + 7 \times 3 - 9^2$

- (a) 27
- (b) 343
- (c) 125
- (d) 64
- (e) 216

Q25. $? \times 4 - 40^2 = 14^2 - 36 \times 44$

- (a) 45
- (b) 51
- (c) 53
- (d) 55
- (e) 57

Q26. $\frac{187}{357} \times (42)^2 - 220\% \text{ of } 380 = 25\% \text{ of } ?$

- (a) 330
- (b) 358
- (c) 342
- (d) 352
- (e) 362

Q27. $44 \times 46 - 160\% \text{ of } 950 = \sqrt{441} \times ?$

- (a) 14
- (b) 24
- (c) 18
- (d) 28
- (e) 26

Q28. $2744 - 1418 + 1756 - 1956 = ? + 986$

- (a) 110
- (b) 120
- (c) 140
- (d) 150
- (e) 180

Q29. $77\% \text{ of } 150 + 37.5\% \text{ of } 260 = ?\% \text{ of } 284$

- (a) 75
- (b) 65
- (c) 55
- (d) 45
- (e) 85



Q30. $7\frac{1}{6} + 9\frac{2}{3} - 4\frac{1}{2} = ? - 5\frac{5}{6} + 6\frac{1}{2} + 3\frac{1}{6}$

- (a) 8
- (b) $8\frac{1}{2}$
- (c) $8\frac{1}{3}$
- (d) $8\frac{3}{4}$
- (e) $8\frac{2}{3}$

Q31. $2^5 \times 2^7 \div 4^3 \times 8^4 \div 16^3 = 2^?$

- (a) 5
- (b) 4
- (c) 8
- (d) 6
- (e) 9

Q32. $\sqrt{576} \times \sqrt{6561} = ? \times \sqrt{11664}$

- (a) 15
- (b) 18
- (c) 21
- (d) 24
- (e) 28

Q33. $\frac{306}{69} \times \frac{483}{34} \div \frac{63}{25} = ?^2$

- (a) 25
- (b) 21
- (c) 6
- (d) 5
- (e) 7

Q34. $0.4 \times 220 \div 48 \times 18 = ? \times (1331)^{\frac{1}{3}}$

- (a) 3
- (b) 6
- (c) 9
- (d) 2
- (e) 4

Q35. $22.5\% \text{ of } 120 + 47.5\% \text{ of } 360 = ? \times 11$

- (a) 19
- (b) 14
- (c) 15
- (d) 16
- (e) 18



Q36. $33\frac{1}{3}\%$ of 360 + $66\frac{2}{3}\%$ of 120 = ? $\times 7\frac{3}{11}$

- (a) 22.5
- (b) 27.5
- (c) 2.25
- (d) 2.75
- (e) 225

Q37. $[(180)^2 \div 90 \times 8] \div 64 = 30\%$ of ?

- (a) 90
- (b) 120
- (c) 150
- (d) 180
- (e) 210

Q38. $\sqrt{7} + 36\%$ of 350 = 62.5% of 224 + 40% of 55

- (a) 1356
- (b) 1196
- (c) 1256
- (d) 1156
- (e) 1296

Q39. $\frac{253}{483} \times 84 + \frac{126}{154} \times \frac{198}{18} = ?$

- (a) 53
- (b) 55
- (c) 57
- (d) 59
- (e) 61



Q40. ? = $\sqrt[3]{24389} + \sqrt{1849} + \sqrt[3]{10648}$

- (a) 84
- (b) 94
- (c) 88
- (d) 98
- (e) 96

Q41. $1278 + 1822 - 288 + 2122 = ?$

- (a) 5328
- (b) None of these
- (c) 4289
- (d) 4934
- (e) 4724

Q42. $3250 \div 5^2 + 1208 \div 2^3 = ?$

- (a) 281
- (b) 236
- (c) 201
- (d) 381
- (e) 251

Q43. $\sqrt{1156} + \sqrt[3]{1728} - 840 \div 28 = (?)^2$

- (a) 16
- (b) 2
- (c) 4
- (d) 8
- (e) 6

Q44. $\sqrt{?} + 161 - 546 \div 26 = 25 \times 6$

- (a) 121
- (b) 81
- (c) None of these
- (d) 100
- (e) 10

Q45. $1\frac{7}{8} - 2\frac{1}{4} + 3\frac{1}{2} = ? - 4\frac{1}{4}$

- (a) None of these
- (b) $5\frac{3}{4}$
- (c) $9\frac{3}{8}$
- (d) $5\frac{2}{7}$
- (e) $7\frac{3}{8}$

Q46. $8743 + 486 \div 18 \times 148 = ?$

- (a) 13729
- (b) 12739
- (c) 12749
- (d) 13279
- (e) None of these

Q47. $[(135)^2 \div 15 \times 39] \div ? = 13 \times 15$

- (a) 343
- (b) 125
- (c) 361
- (d) 289
- (e) 243



Q48. $6348 + 8515 - 695 - ? = 4312 + 2162$

- (a) 7394
- (b) 7943
- (c) 7439
- (d) 7434
- (e) 7694

Q49. $1272 \div ? = 1382 - 956 - 214$

- (a) 6
- (b) 8
- (c) 16
- (d) 18
- (e) 21

Q50. $10^{37} \times 10^{-33} = 10^?$

- (a) 4
- (b) 7
- (c) 6
- (d) 5
- (e) None of these

Q51. $\frac{3432}{4} \times \frac{5}{3} + 168 = ?$

- (a) 1234
- (b) 1598
- (c) 1432
- (d) 1546
- (e) None of these

Q52. $\frac{242}{6} \div \frac{3}{4} + ? = 31$

- (a) $\frac{-205}{9}$
- (b) $\frac{-215}{9}$
- (c) $\frac{-225}{9}$
- (d) $\frac{-235}{9}$
- (e) None of these

Q53. $\frac{2}{7}$ of $343 + \frac{512}{256} = ?$

- (a) 90
- (b) 80
- (c) 100
- (d) 110
- (e) None of these



Q54. $1089 \times 101 + 36 \times 44 = ?$

- (a) 111576
- (b) 111546
- (c) 111453
- (d) 111573
- (e) None of these

Q55. $4349.1 + 2256.4 - 1151.2 - 1244.3 = ?$

- (a) 4210
- (b) 4321
- (c) 4530
- (d) 4230
- (e) None of these

Q56. $5\frac{1}{3} + 3\frac{4}{9} - 7\frac{1}{2} - 2\frac{1}{4} = ? - 16\frac{2}{9} + 11\frac{1}{4} - 5\frac{1}{2}$

- (a) 9
- (b) $9\frac{1}{2}$
- (c) $9\frac{2}{3}$
- (d) $9\frac{3}{4}$
- (e) 10

Q57. $\sqrt{1296} + (2744)^{\frac{1}{3}} = ?^2 - \sqrt{961}$

- (a) 11
- (b) 27
- (c) 6
- (d) 81
- (e) 9

Q58. $63\% \text{ of } 450 + 81\% \text{ of } 150 = ?\% \text{ of } 675$

- (a) 80
- (b) 45
- (c) 50
- (d) 60
- (e) 70

Q59. $205 \times ? \times 13 = 33625 + 25005$

- (a) 18
- (b) 21
- (c) 22
- (d) 24
- (e) 27



Q60. $\frac{3}{8}$ of $\frac{4}{7}$ of $\frac{9}{11}$ of 4312 = ? $\times \sqrt{49}$

- (a) 108
- (b) 96
- (c) 98
- (d) 104
- (e) 112

Direction (61 - 100): What approximate value should come in the place of question (?) mark:

Q61. $?^3 \times 17.98 + 12.03\% \text{ of } 450.03 = (14.02)^2 + \sqrt[4]{15.99}$

- (a) 9
- (b) 2
- (c) 5
- (d) 8
- (e) 11

Q62. $\frac{?}{14.08} + (22.03)^2 = (23.98)^2 + \sqrt[3]{63.98}$

- (a) 1344
- (b) 1300
- (c) 1296
- (d) 1248
- (e) 1440

Q63. ? % of 1355.02 + 19.98% of 1210.01 = $(27.99)^2$

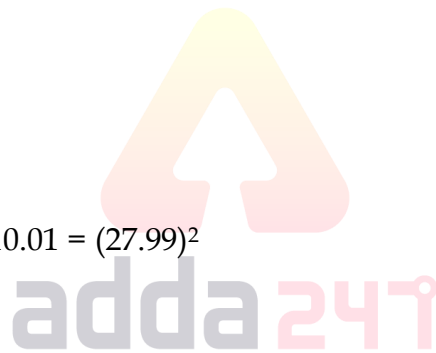
- (a) 75
- (b) 80
- (c) 60
- (d) 40
- (e) 24

Q64. ? + 35.09 % of 1279.98 = $(24.03)^2 + \sqrt{195.98}$

- (a) 142
- (b) 148
- (c) 156
- (d) 164
- (e) 176

Q65. 56.03 % of ? + 125.02% of 96.03 = $(13.98)^2 - \sqrt[4]{1295.98}$

- (a) 120
- (b) 115
- (c) 105
- (d) 125
- (e) 135



Q66. $(23.02 \times 22.98) + 11.89 \times 7.98 = ?^2$

- (a) 20
- (b) 25
- (c) 31
- (d) 22
- (e) 30

Q67. $87.08 + 913.99 - 260.13\% \text{ of } 129.88 = 74.98\% \text{ of } ?$

- (a) 663
- (b) 552
- (c) 672
- (d) 221
- (e) 884

Q68. $?% \text{ of } 1049.87 + 74.99\% \text{ of } 420.12 = 750.11\% \text{ of } 70$

- (a) 15
- (b) 20
- (c) 10
- (d) 35
- (e) 25

Q69. $\sqrt{324.11 \times 19.98 \times 49.99 \times 8.01 \times 20.01} + 25.17\% \text{ of } 31.9 = ?$

- (a) 368
- (b) 455
- (c) 312
- (d) 244
- (e) 632

Q70. $359.99 \times 288.02 \div 14.98 \div 17.94 = \frac{(?)^2}{6}$

- (a) 51
- (b) 38
- (c) 41
- (d) 45
- (e) 48

Q71. $\frac{17.99}{3} \times \frac{1}{\sqrt{3.98}} = \sqrt{x}$

- (a) 2
- (b) 3
- (c) 4
- (d) 6
- (e) 9

Q72. 19.90% of $160 \times \frac{4.01}{63.99} = x$

- (a) 4
- (b) 3
- (c) 2
- (d) 6
- (e) 8

Q73. $22.9 + 13.1 - 9.99\%$ of $200.22 = x$

- (a) 17
- (b) 13
- (c) 12
- (d) 16
- (e) 24

Q74. $\frac{67.89}{15.11} \times \frac{89.9}{17} = 19.99 + x$

- (a) 6
- (b) 5
- (c) 4
- (d) 8
- (e) 2

Q75. $\frac{1}{3}$ of $899.8 \div \frac{2}{199.9} = x$

- (a) 30000
- (b) 20000
- (c) 24000
- (d) 43000
- (e) 25000

Q76. $1884.89 \div 144.89 + (5.9)^2$ of $\frac{1}{6.02} = ?$ of 12.5%

- (a) 179
- (b) 118
- (c) 198
- (d) 152
- (e) 92

Q77. $\frac{7}{8}$ of $1700 - \frac{10}{7}$ of $903 = ? - \frac{67.83}{3}$

- (a) 126
- (b) 289
- (c) 220
- (d) 158
- (e) 15



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Q78. $\sqrt{14500} \times 27.82 - (12.96)^3 = ?$

- (a) 1005
- (b) 1242
- (c) 942
- (d) 1160
- (e) 1363

Q79. $(8.927)^2 + (15.011)^3 + 1649.28 = ?$

- (a) 8975
- (b) 3250
- (c) 2476
- (d) 3965
- (e) 5100

Q80. $? = (729)^{1/3} \times 24.96 - \sqrt[3]{215.96} \times 30.05$

- (a) 60
- (b) 45
- (c) 76
- (d) 38
- (e) 12

Q81. $(1330.57)^{1/3} \times (11.79) + 62.5\% \text{ of } 399.671 - ? = [(343.11)^2]^{1/6} \times 49.02$

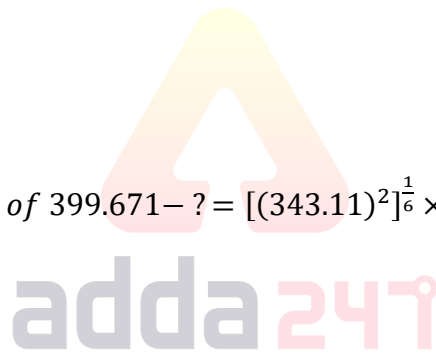
- (a) 48
- (b) 57
- (c) 69
- (d) 39
- (e) 18

Q82. $59.8\% \text{ of } 1539.5 + 37.5\% \text{ of } 95.78 + 0.99 = (?)^2$

- (a) 28
- (b) 31
- (c) 26
- (d) 25
- (e) 35

Q83. $66.98 + (9.084)^{1/2} + ? = 52.114 + (8.041)^2$

- (a) 41
- (b) 26
- (c) 46
- (d) 56
- (e) 36



Q84. $16.004\sqrt{?} + 68.899\sqrt{?} - 10.001\sqrt{?} = \frac{75.11}{33.99} \times (?)$

- (a) 1225
- (b) 961
- (c) 1024
- (d) 729
- (e) 1156

Q85. $[(25.35)^9]^{\frac{1}{6}} + 22\% \text{ of } 449 = ? + (2.99 \times 2.01)^{2.99}$

- (a) 8
- (b) 32
- (c) 15
- (d) 20
- (e) 12

Q86. $424.97 \times 8.02 - \frac{272.12 + ?}{7.86} = 124.93\% \text{ of } 2399.57$

- (a) 2928
- (b) 2828
- (c) 2728
- (d) 2628
- (e) 3028

Q87. $578.87 + 330.93 + 29.93\% \text{ of } ? = 40.05\% \text{ of } 2799.87$

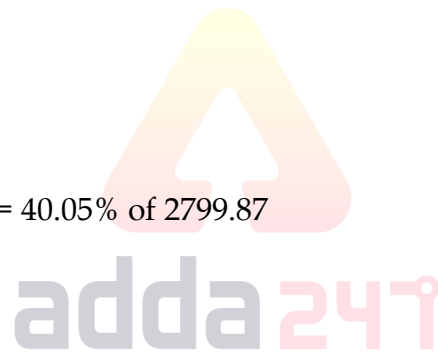
- (a) 775
- (b) 500
- (c) 600
- (d) 700
- (e) 825

Q88. $\frac{727.11 + ?}{14.98} + \sqrt[3]{1727.83} - 59.89 = \sqrt{1023.89}$

- (a) 593
- (b) 473
- (c) 373
- (d) 273
- (e) 673

Q89. $\sqrt{?} + (16.89)^2 - 24.93\% \text{ of } 47.89 = 49.97 \times 5.93$

- (a) 169
- (b) 1089
- (c) 729
- (d) 625
- (e) 529



Q90. $[\sqrt[3]{728.89} + \sqrt{1295.97} + \sqrt[3]{3374.83}] \div ? = \sqrt{224.97}$

- (a) 4
- (b) 10
- (c) 14
- (d) 18
- (e) 8

Q91. $23.99 \times 26.003 + \frac{\sqrt{48.97} \times 13.05}{90.98} = 4.97 \times ?^3$

- (a) 1
- (b) 17
- (c) 5
- (d) 12
- (e) 8

Q92. $109.07\sqrt{?} - \frac{61}{21.02} \times ? = 47.96\sqrt{?}$

- (a) 441
- (b) 169
- (c) 250
- (d) 121
- (e) 324

Q93. $1332.89 + 171.928 + 17.01 + ?^2 = 1690.87$

- (a) 27
- (b) 17
- (c) 9
- (d) 13
- (e) 19

Q94. $150.09\% \text{ of } 20 + \frac{322.9}{17.02} + \sqrt{?} = (8.96)^2$

- (a) 984
- (b) 1024
- (c) 1360
- (d) 1225
- (e) 674

Q95. $56.08\% \text{ of } 149.92 + \sqrt{28.02 \times 6.98} - 11\frac{1}{9}\% \text{ of } 998.9 = ?$

- (a) 17
- (b) -13
- (c) 8
- (d) -16
- (e) 22



Q96. $2^2 \times (3)^7 \times (5.989)^2 = (11.979)^2 \times 8.917$

- (a) 8
- (b) 2
- (c) 16
- (d) 32
- (e) 12

Q97. $12.5\% \text{ of } 511.8 + 37.5\% \text{ of } 95.8 + 3.03 \times 6.99 = (?)^2$

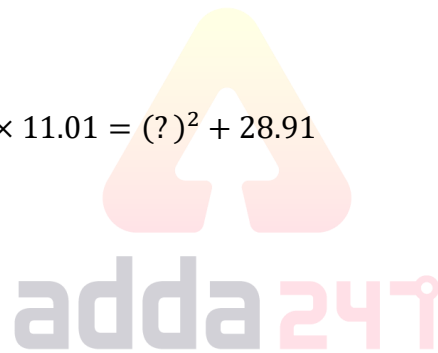
- (a) 21
- (b) 121
- (c) 28
- (d) 11
- (e) 32

Q98. $[(64.01)^4]^{\frac{1}{12}} \times 15.99 + 31.95 \times 7.98 = ? \times 7.96$

- (a) 25
- (b) 56
- (c) 40
- (d) 64
- (e) 32

Q99. $(3374.81)^{\frac{1}{3}} \times \sqrt{21.11 + 14.99} \times 11.01 = (?)^2 + 28.91$

- (a) 31
- (b) 21
- (c) 35
- (d) 26
- (e) 16



Q100. $\frac{3.99^2 \times (143.56)^{\frac{1}{2}} \times (?)^2}{15.95 \times 7.999} = \frac{(2.99)^3 \times 7.97}{(2.01)^2}$

- (a) 5
- (b) 4
- (c) 8
- (d) 7
- (e) 6

Directions (101-160): What should come in place of the question mark (?) in the following number series.

Q101. 90, 55, 75, 142.5, ? , 862.5

- (a) 285
- (b) 325
- (c) 470
- (d) 855
- (e) 270

Q102. 5, 12, 39, 160, ?, 4836

- (a) 850
- (b) 750
- (c) 800
- (d) 805
- (e) 820

Q103. 1, ?, 7, 31, 151, 911

- (a) 4
- (b) 5
- (c) 2
- (d) 3.5
- (e) 3

Q104. ?, 16, 64, 8, 128, 4

- (a) 32
- (b) 4
- (c) 8
- (d) 16
- (e) 64

Q105. 2, 30, 130, 350, ?, 1342

- (a) 712
- (b) 720
- (c) 738
- (d) 742
- (e) 750

Q106. 960, 720, 600, ?, 510, 495

- (a) 530
- (b) 535
- (c) 540
- (d) 545
- (e) 550

Q107. 5, 6, 16, 57, 244, ?

- (a) 1260
- (b) 1235
- (c) 1230
- (d) 1220
- (e) 1245



Q108. 107, 108, 100, 127, 63, ?

- (a) 193
- (b) 178
- (c) 198
- (d) 160
- (e) 188

Q109. 32, 16, 16, 24, 48, ?

- (a) 96
- (b) 120
- (c) 144
- (d) 168
- (e) 192

Q110. 12, 18, 30, 50, 80, ?

- (a) 120
- (b) 116
- (c) 118
- (d) 122
- (e) 126

Q111. 47, 66, 28, 85, ?, 104

- (a) 92
- (b) 54
- (c) 36
- (d) 9
- (e) 97

Q112. 1296, 216, 72, 36, 24, ?

- (a) 12
- (b) 20
- (c) 6
- (d) 15
- (e) 9

Q113. 1, 7, 19, 39, 69, ?

- (a) 121
- (b) 132
- (c) 128
- (d) 104
- (e) 111



Q114. 2, ?, 12, 25, 46, 77

- (a) 8
- (b) 6
- (c) 4
- (d) 3
- (e) 5

Q115. 1, 121, 441, 961, ?, 2601

- (a) 1551
- (b) 1421
- (c) 1761
- (d) 1681
- (e) 2481

Q116. 182, 186, 190, 198, 222, ?

- (a) 308
- (b) None of these
- (c) 316
- (d) 318
- (e) 328

Q117. ?, 112, 118, 138, 180, 252

- (a) 112
- (b) 110
- (c) 108
- (d) 111
- (e) None of these

Q118. ?, 3450, 1728, 580, 150, 36

- (a) None of these
- (b) 3454
- (c) 3548
- (d) 3448
- (e) 3624

Q119. 1210, 1222, 1242, 1269, 1302, ?

- (a) None of these
- (b) 1424
- (c) 1360
- (d) 1348
- (e) 1340



Q120. 102, 105, 114, 141, ?, 465

- (a) 222
- (b) 218
- (c) 336
- (d) None of these
- (e) 228

Q121. 16, ?, 8, 12, 24, 60

- (a) 8
- (b) 12
- (c) 16
- (d) 10
- (e) 4

Q122. 201, 199, 192, 175, 143, ?

- (a) 89
- (b) None of these
- (c) 91
- (d) 93
- (e) 103

Q123. ?, 8, 14, 34, 76, 148

- (a) None of these
- (b) 12
- (c) 4
- (d) 16
- (e) 8

Q124. 5040, 840, 168, 42, 14, ?, 7

- (a) 8
- (b) 9
- (c) None of these
- (d) 7
- (e) 3

Q125. 60.75, 40.5, 27, 18, 12, ?

- (a) 12
- (b) 8
- (c) 6.5
- (d) 8.5
- (e) 6



Q126. 9, 43, 169, 503, 1001, ?

- (a) 995
- (b) 809
- (c) 999
- (d) 997
- (e) 1006

Q127. 79, 54, 75, 58, 71, ?

- (a) 53
- (b) 62
- (c) 71
- (d) 78
- (e) 64

Q128. 50, 53, 67, 100, 160, ?

- (a) 240
- (b) 263
- (c) 258
- (d) 255
- (e) 161

Q129. 162, 54, 36, ?, 48, 80

- (a) 33
- (b) 42
- (c) 24
- (d) 30
- (e) 36

Q130. 9, 5, 7, 22, 120, ?

- (a) 1100
- (b) 1088
- (c) 890
- (d) 1050
- (e) 1000

Q131. 22, ?, 166, 310, 502, 742

- (a) 60
- (b) 70
- (c) 50
- (d) 80
- (e) 90



Q132. 28, 18, ?, 37, 78, 199

- (a) 20
- (b) 16
- (c) 22
- (d) 24
- (e) 28

Q133. 25, 90, ?, 177, 203, 220

- (a) 150
- (b) 148
- (c) 144
- (d) 140
- (e) 160

Q134. 103, ?, 190, 247, 313, 388

- (a) 132
- (b) 122
- (c) 152
- (d) 162
- (e) 142

Q135. 21, ?, 199, 603, 1817, 5461

- (a) 65
- (b) 55
- (c) 45
- (d) 75
- (e) 85

Q136. 2, 4, 10, 22, 42, ?

- (a) 67
- (b) 70
- (c) 72
- (d) 75
- (e) 78

Q137. 8, 4, 6, 15, ?, 236.25

- (a) 46.5
- (b) 48.5
- (c) 50.5
- (d) 52.5
- (e) 54.5



Q138. 15, 34, 72, 148, ?, 604

- (a) 300
- (b) 290
- (c) 295
- (d) 280
- (e) 285

Q139. 25, 30, 20, 40, ?, 80

- (a) 40
- (b) 20
- (c) 10
- (d) 0
- (e) 60

Q140. 15, 8, 9, 15, 32, ?

- (a) 77.5
- (b) 80
- (c) 82.5
- (d) 85
- (e) 87.5

Q141. 18, 55, 167, 504, ?, 4553

- (a) 1216
- (b) 1516
- (c) 1520
- (d) 1816
- (e) 1220

Q142. 279, 294, 324, 369, 429, ?

- (a) 504
- (b) 520
- (c) 564
- (d) 604
- (e) 524

Q143. 10, 26, 50, 110, 320, ?

- (a) 825
- (b) 1245
- (c) 1065
- (d) 1265
- (e) 1625



Q144. 286, 142, ?, 34, 16, 7

- (a) 54
- (b) 70
- (c) 60
- (d) 64
- (e) 50

Q145. 200, 320, 464, 613, 786, 964, ?

- (a) 1284
- (b) 1066
- (c) 1166
- (d) 1612
- (e) 1264

Q146. 23, 27, 36, 61, 110, ?

- (a) 221
- (b) 231
- (c) 225
- (d) 191
- (e) 204

Q147. 4, 2, 3, 7.5, ?, 118.125

- (a) 26.5
- (b) 24.25
- (c) 26.25
- (d) 18.25
- (e) 18.625

Q148. 90, 139, 103, 128, ?, 121

- (a) 112
- (b) 114
- (c) 104
- (d) 125
- (e) 110

Q149. 81, 87, 107, 149, ?, 331

- (a) 222
- (b) 220
- (c) 138
- (d) 221
- (e) 119



Q150. 26, 36, 54, 80, 114, ?

- (a) 146
- (b) 133
- (c) 201
- (d) 134
- (e) 156

Q151. 821, 784, 743, ?, 653, 600

- (a) 698
- (b) 700
- (c) 721
- (d) 671
- (e) 702

Q152. 2, 3, 27, 74, ?, 237

- (a) 148
- (b) 121
- (c) 144
- (d) 134
- (e) 178

Q153. 32, 144, 504, 1260, 1890, ?

- (a) 945
- (b) 2145
- (c) 2560
- (d) 815
- (e) 915

Q154. 3, 4, 7, 11, 18, ?

- (a) 32
- (b) 25
- (c) 36
- (d) 27
- (e) 29

Q155. ?, 16, 36, 64, 100, 144

- (a) 8
- (b) 12
- (c) 2
- (d) 4
- (e) 6



Q156. 64, ?, 48, 120, 420, 1890

- (a) 27
- (b) 32
- (c) 30
- (d) 24
- (e) 36

Q157. 7, 5, ?, 17, 63, 309

- (a) 10
- (b) 3
- (c) 8
- (d) 7
- (e) 9

Q158. 2, 7, 19, 38, 64, ?

- (a) 128
- (b) 112
- (c) 97
- (d) 88
- (e) 92

Q159. 2, ?, 35, 98, 222, 437

- (a) 9
- (b) 17
- (c) 15
- (d) 8
- (e) 7

Q160. 4, 8, 17, ?, 58, 94

- (a) 38
- (b) 27
- (c) 29
- (d) 37
- (e) 33

Direction (161-200): Find the wrong number in following number series.

Q161. 6, 10, 36, 144, 640, 3320, 19944

- (a) 6
- (b) 10
- (c) 36
- (d) 144
- (e) 3320



Q162. 35, 54, 77, 104, 135, 170, 207

- (a) 35
- (b) 104
- (c) 207
- (d) 135
- (e) 170

Q163. 16, 28, 78, 304, 1510, 9044, 63322

- (a) 9044
- (b) 28
- (c) 78
- (d) 304
- (e) 1510

Q164. 67, 408, 446, 571, 587, 614, 618

- (a) 67
- (b) 408
- (c) 571
- (d) 587
- (e) 614

Q165. 16, 140, 248, 342, 424, 496, 558

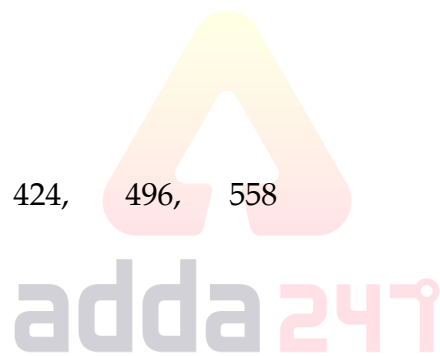
- (a) 424
- (b) 496
- (c) 140
- (d) 558
- (e) 16

Q166. 156, 299, 494, 749, 1070, 1471

- (a) 156
- (b) 1471
- (c) 494
- (d) 1070
- (e) 299

Q167. 728, 839, 958, 1085, 1222, 1363

- (a) 728
- (b) 1222
- (c) 839
- (d) 1085
- (e) 1363



Q168. 16, 102, 515, 2064, 6195, 12396

- (a) 16
- (b) 102
- (c) 12396
- (d) 2064
- (e) 6195

Q169. 721, 103, 618, 123.6, 492.4, 164.8

- (a) 721
- (b) 103
- (c) 618
- (d) 123.6
- (e) 492.4

Q170. 4256, 3472, 3080, 2884, 2786, 2738

- (a) 2884
- (b) 3472
- (c) 4256
- (d) 2786
- (e) 2738

Q171. 143, 150, 165, 380, 444, 1442

- (a) 150
- (b) 165
- (c) 143
- (d) 444
- (e) 1442

Q172. 4, 32, 88, 172, 282, 424

- (a) 4
- (b) 282
- (c) 88
- (d) 282
- (e) 172

Q173. 12, 14, 32, 102, 414, 2090

- (a) 12
- (b) 14
- (c) 414
- (d) 32
- (e) 2090



TEST SERIES

Bilingual

VIDEO SOLUTIONS



**SBI CLERK 2021
PRELIMS**

40 TOTAL TESTS

Q174. 42, 4, 36, 7.2, 28.8 9.6

- (a) 42
- (b) 36
- (c) 7.2
- (d) 9.6
- (e) 4

Q175. 144, 1331, 100, 729, 64, 216

- (a) 216
- (b) 144
- (c) 1331
- (d) 729
- (e) 64

Q176. 256, 384, 576, 864, 1296, 1944, 2924

- (a) 1944
- (b) 864
- (c) 1296
- (d) 2924
- (e) 384

Q177. 175, 900, 1143, 1224, 1251, 1260, 1263

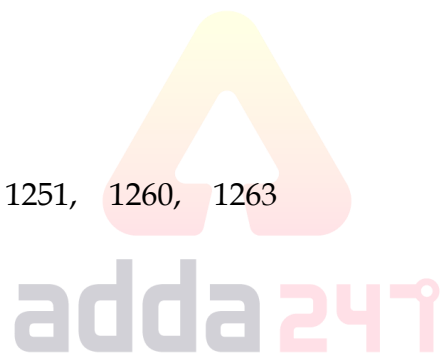
- (a) 175
- (b) 900
- (c) 1143
- (d) 1260
- (e) 1263

Q178. 20, 32, 60, 150, 450, 1575, 6300

- (a) 60
- (b) 20
- (c) 1575
- (d) 6300
- (e) 32

Q179. 824, 568, 440, 376, 344, 330, 320

- (a) 824
- (b) 330
- (c) 568
- (d) 344
- (e) 320



Q180. 90, 177, 268, 373, 499, 653, 842

- (a) 653
- (b) 177
- (c) 90
- (d) 842
- (e) 499

Q181. 419, 420, 425, 450, 575, 1200, 4320

- (a) 419
- (b) 4320
- (c) 420
- (d) 1200
- (e) 425

Q182. 7, 8, 16, 52, 209, 1046, 6277

- (a) 6277
- (b) 7
- (c) 1046
- (d) 16
- (e) 8

Q183. 7, 22, 46, 88, 166, 316, 600

- (a) 600
- (b) 7
- (c) 316
- (d) 22
- (e) 46

Q184. 240, 180, 120, 360, 90, 450, 75

- (a) 75
- (b) 180
- (c) 450
- (d) 240
- (e) 120

Q185. 3000, 3008, 3072, 3288, 3800, 4800, 5528

- (a) 4800
- (b) 3008
- (c) 3288
- (d) 3000
- (e) 5528



Q186. 45, 44, 49, 39, 55, 30, 66

- (a) 45
- (b) 44
- (c) 30
- (d) 49
- (e) Series is correct

Q187. 3, 9, 23, 99, 479, 2881, 20154

- (a) 3
- (b) 23
- (c) 99
- (d) 288
- (e) Series is correct

Q188. 5, 3, 6, 7.5, 17, 45, 138

- (a) 6
- (b) 5
- (c) 7.5
- (d) 17
- (e) None of these

Q189. 10, 12, 15, 22, 38, 70, 126

- (a) 10
- (b) 12
- (c) 15
- (d) 38
- (e) 127

Q190. 2, 13, 27, 113, 561, 3369, 23581

- (a) 2
- (b) 13
- (c) 113
- (d) 3369
- (e) 23581

Q191. 48, 26, 28, 44, 88, 227, 683

- (a) 683
- (b) 48
- (c) 223
- (d) 26
- (e) 88



Q192. 280, 204, 264, 216, 252, 228, 240

- (a) 280
- (b) 264
- (c) 240
- (d) 228
- (e) 204

Q193. 3600, 600, 120, 30, 10, 5, 2.5

- (a) 3600
- (b) 5
- (c) 10
- (d) 2.5
- (e) 120

Q194. 4, 5, 10, 34, 94, 214, 424

- (a) 424
- (b) 5
- (c) 214
- (d) 4
- (e) 10

Q195. 4, 6, 15, 49, 201, 1005, 6073

- (a) 6073
- (b) 6
- (c) 201
- (d) 4
- (e) 1005

Q196. 8, 12, 24, 60, 180, 640, 2520

- (a) 60
- (b) 180
- (c) 2520
- (d) 640
- (e) 8

Q197. -1, 1, 2, 6, 14, 30, 62

- (a) 1
- (b) 62
- (c) -1
- (d) 14
- (e) 30



Q198. 3, 4, 12, 41, 103, 228, 444

- (a) 228
- (b) 3
- (c) 41
- (d) 444
- (e) 103

Q199. 5, 3, 4, 7, 17, 45, 138

- (a) 3
- (b) 7
- (c) 17
- (d) 45
- (e) 138

Q200. 17, 25, 38, 53, 79, 107, 140

- (a) 79
- (b) 140
- (c) 25
- (d) 53
- (e) 107

Directions (201-205): In each question two equations numbered I and II are given. You have to solve both the equations and mark appropriate answer.

- (a) If $x < y$
- (b) If $x > y$
- (c) If $x \geq y$
- (d) If $x \leq y$
- (e) If $x = y$ or no relation can be established

Q201. I) $4x^2 - 16x + 15 = 0$

II) $2y^2 - 13y + 18 = 0$

Q202. I) $5x^2 + 17x + 6 = 0$

II) $7y^2 + 24y + 9 = 0$

Q203. I) $\sqrt{289}x + \sqrt{225}y = 125$

II) $\sqrt{361}x + \sqrt{25}y = 15$

Q204. I) $15x^2 - 4x - 35 = 0$

II) $9y^2 - 43y - 10 = 0$

Q205. I) $13x^2 - 64x - 5 = 0$

II) $11y^2 - 31y - 6 = 0$

Directions (206-210): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

- (a) if $x > y$
- (b) if $x \geq y$
- (c) if $x < y$
- (d) if $x \leq y$
- (e) if $x = y$ or no relation can be established between x and y .

Q206. I. $x^2 - 8x + 15 = 0$

II. $y^2 - 11y + 30 = 0$

Q207. I. $x^2 + 5x + 4 = 0$

II. $y^2 + 7y - 18 = 0$

Q208. I. $x^2 - 9 = 0$

II. $y^2 + 9y - 36 = 0$

Q209. I. $\frac{x}{(8)^{1.6}} = 2^{1.2}$

II. $(81)^{1.2}y = (27)^{2.6}$

Q210. I. $5x = \sqrt[3]{4096}$

II. $\frac{6y}{\sqrt[3]{729}} = \sqrt{9}$

Directions (211-215): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

- (a) if $x > y$
- (b) if $x \geq y$
- (c) if $x = y$ or no relation can be established between x and y .
- (d) if $y > x$
- (e) if $y \geq x$

Q211. (i) $x^2 - 12x + 32 = 0$

(ii) $y^2 - 20y + 96 = 0$

Q212. (i) $2x^2 - 3x - 20 = 0$

(ii) $2y^2 + 11y + 15 = 0$

Q213. (i) $x^2 - x - 6 = 0$

(ii) $y^2 - 6y + 8 = 0$

Q214. (i) $x^2 + 14x - 32 = 0$

(ii) $y^2 - y - 12 = 0$

Q215. (i) $x^2 - 9x + 20 = 0$

(ii) $2y^2 - 12y + 18 = 0$

Directions (216-220): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(a) if $x > y$

(b) if $x \geq y$

(c) if $x < y$

(d) if $x \leq y$

(e) if $x = y$ or no relation can be established between x and y .

Q216. I. $3x^2 - 19x + 28 = 0$

II. $4y^2 - 19y + 21 = 0$

Q217. I. $3x + 4y = 2$

II. $6x + 2y = 2.5$

Q218. I. $8x + 7y = -60$

II. $7x - 5y = -8$

Q219. I. $12x^2 - 41x + 35 = 0$

II. $3y + 25y = 49$

Q220. I. $x^2 + 16x + 63 = 0$

II. $y^2 + 8y + 15 = 0$

Directions (221-225): Solve the given quadratic equations and mark the correct option based on your answer –

(a) $x < y$

(b) $x \leq y$

(c) $x = y$ or no relation can be established between x and y .

(d) $x > y$

(e) $x \geq y$

Q221. (i) $6x^2 - 17x + 12 = 0$

(ii) $6y^2 - 23y + 21 = 0$

Q222. (i) $21x^2 - 4x - 1 = 0$

(ii) $30y^2 + 11y + 1 = 0$



Q223. (i) $4x^2 + 57x + 189 = 0$

(ii) $2y^2 + 27y + 85 = 0$

Q224. (i) $3x + 7y = 28$

(ii) $5x + 3y = 38$

Q225. (i) $x^2 + 5x = 4(1 - x) + 9x$

(ii) $y^2 + 7y = 8$

Directions (226-230): Given below are two equations in each question, which you have to solve the equation and give answer

(a) if $x > y$

(b) if $x \geq y$

(c) if $y > x$

(d) if $y \geq x$

(e) if $x = y$ or no relation can be established

Q226. I. $x^2 - 5x + 4 = 0$

II. $y^2 + 3y + 2 = 0$

Q227. I. $6x^2 - 5x + 1 = 0$

II. $15y^2 - 8y + 1 = 0$

Q228. I. $x^2 + 5x + 4 = 0$

II. $y^2 - 5y = 14$

Q229. I. $x^2 + 9x + 20 = 0$

II. $y^2 + 4y + 3 = 0$

Q230. I. $x^2 - 6x + 8 = 0$

II. $y^2 + 2y = 8$

Directions (231-235): In each question two equations numbered (I) and (II) are given. You should solve both the equations and mark appropriate answer.

(a) If $x=y$ or no relation can be established

(b) If $x>y$

(c) If $x<y$

(d) If $x\geq y$

(e) If $x\leq y$

Q231. I. $25x^2 - 90x + 72 = 0$

II. $5y^2 - 27y + 36 = 0$



Q232. I. $12x^2 + 46x + 42 = 0$

II. $3y^2 - 16y + 21 = 0$

Q233. I. $4x^2 + 10x = 14$

II. $15 = 16y - 4y^2$

Q234. I. $6x^2 + 15x - 36 = 0$

II. $4y^2 - 2y - 10 = -8$

Q235. I. $2x^2 - 19x + 44 = 0$

II. $3y^2 - 22y + 40 = 0$

Directions (236-240): Solve the given quadratic equations and mark the correct option based on your answer –

Q236. (i) $x^2 + 9x = 25x - 63$

(ii) $4y^2 - 34y + 72 = 0$

(a) $x = y$ or no relation can be established between x and y .

(b) $x \leq y$

(c) $x < y$

(d) $x > y$

(e) $x \geq y$

Q237. (i) $\frac{20\% \text{ of } 225}{x} = -x + 14$

(ii) $30\% \text{ of } 70y = y^2 + 90$

(a) $x \geq y$

(b) $x > y$

(c) $x = y$ or no relation can be established between x and y .

(d) $x \leq y$

(e) $x < y$

Q238. (i) $6x + 7y = 15$

(ii) $3x + 14y = 19.5$

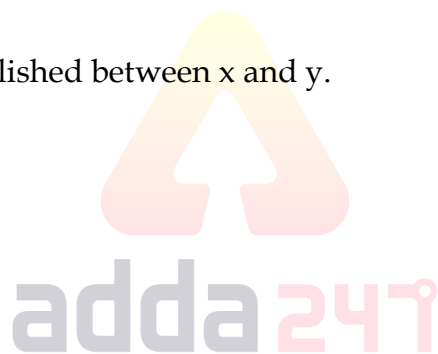
(a) $x > y$

(b) $x = y$ or no relation can be established between x and y .

(c) $x \leq y$

(d) $x < y$

(e) $x \geq y$



Q239. (i) $7x^2 + 5x - 18 = 0$

(ii) $3y^2 + 4y - 20 = 0$

(a) $x > y$

(b) $x \leq y$

(c) $x = y$ or no relation can be established between x and y .

(d) $x \geq y$

(e) $x < y$

Q240. (i) $x^2 + 5x = 5(2x + 3x)$

(ii) $3y^2 + 2y = 2(y + 6)$

(a) $x > y$

(b) $x \geq y$

(c) $x < y$

(d) $x \leq y$

(e) $x = y$ or no relation can be established between x and y .

Directions (241-245): In each of the following questions two equations are given. Solve these equations and give answer:

(a) if $x \geq y$, i.e. x is greater than or equal to y

(b) if $x > y$, i.e. x is greater than y

(c) if $x \leq y$, i.e. x is less than or equal to y

(d) if $x < y$, i.e. x is less than y

(e) $x = y$ or no relation can be established between x and y

Q241. I. $6x^2 + 17x + 5 = 0$

II. $2y^2 + 21y + 49 = 0$

Q242. I. $x^2 - 8x + 15 = 0$

II. $2y^2 - 5y - 3 = 0$

Q243. I. $5x^2 + 11x + 2 = 0$

II. $4y^2 + 13y + 3 = 0$

Q244. I. $4x + 2y = 4$

II. $3x + 5y = 3$

Q245. I. $6x^2 + x - 15 = 0$

II. $4y^2 - 24y + 35 = 0$

Directions (246-255): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

- (a) if $x > y$
- (b) if $x \geq y$
- (c) if $x = y$ or no relation can be established between x and y .
- (d) if $y > x$
- (e) if $y \geq x$

Q246. (i) $x^2 - 12x + 32 = 0$

(ii) $y^2 - 20y + 96 = 0$

Q247. (i) $2x^2 - 3x - 20 = 0$

(ii) $2y^2 + 11y + 15 = 0$

Q248. (i) $x^2 - x - 6 = 0$

(ii) $y^2 - 6y + 8 = 0$

Q249. (i) $x^2 + 14x - 32 = 0$

(ii) $y^2 - y - 12 = 0$

Q250. (i) $x^2 - 9x + 20 = 0$

(ii) $2y^2 - 12y + 18 = 0$

(Q1-5) 12 may rrb quiz

Direction (251-255): Read the following table and answer the following question. Table shows the total number of student in 5 different schools and percentage of students scoring 60% or more than 60% in each school.

Schools	Total Students	Percentage of students scoring 60% or above marks
A	600	30%
B	725	24%
C	440	55%
D	625	48%
E	450	40%

Q251. Find the average number of students from school B, C, and D together who score less than 60% marks?

- (a) 407
- (b) 358
- (c) 267
- (d) 372
- (e) 385

Q252. If Boys to girls ratio in school D and E are 11 : 14 and 5 : 4 respectively. Then find the ratio of total Boys in school D and E together to total girls in school D and E together?

- (a) 3 : 4
- (b) 19 : 15
- (c) 9 : 7
- (d) 21 : 22
- (e) 21 : 23

Q253. Students scoring 60% marks or more than 60% from school D are how much percent more or less than students scoring 60% or more from school A and E together.

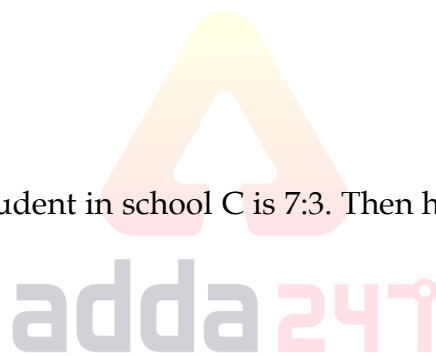
- (a) $16\frac{2}{3}\%$
- (b) $12\frac{1}{2}\%$
- (c) 20%
- (d) $37\frac{1}{2}\%$
- (e) $14\frac{2}{7}\%$

Q254. If ratio of passed to failed student in school C is 7:3. Then how many students passed with less than 60% marks in school C ?

- (a) 42
- (b) 66
- (c) 72
- (d) 55
- (e) 86

Q255. Find the ratio of student who scored less than 60% from school A and B together to students who scored 60% or above from school C and E together?

- (a) 973 : 423
- (b) 422 : 971
- (c) 19 : 17
- (d) 11 : 12
- (e) 971 : 422



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Directions (256-260): Read the given information carefully and answer the following questions.

A man has Rs.12000. He invested 40% of that amount in S.I. with 10% rate and rest in C.I. with same rate for 2 years each.

From the interest earned from both schemes, he purchased a watch which depreciate $16\frac{2}{3}\%$ every year. From the principal of C.I. he purchased a cycle which he further sold at a profit of Rs 1500 after one year and from the principal of S.I. he purchased a phone which was damaged after one year and he sold it at 25% loss.

Q256. What is value of watch after two years? (in Rs)

- (a) 1212.67
- (b) 1456.67
- (c) 1716.67
- (d) 1981.33
- (e) 1823.67

Q257. If man sell that cycle after 2 years at a profit of Rs 1800 then what will be his profit percent ?

- (a) 20%
- (b) 25%
- (c) 16%
- (d) 36%
- (e) 40%

Q258. What is its overall profit or loss percent on selling cycle and phone after one year?

- (a) 2%
- (b) 2.4%
- (c) 3%
- (d) 2.5%
- (e) None of these

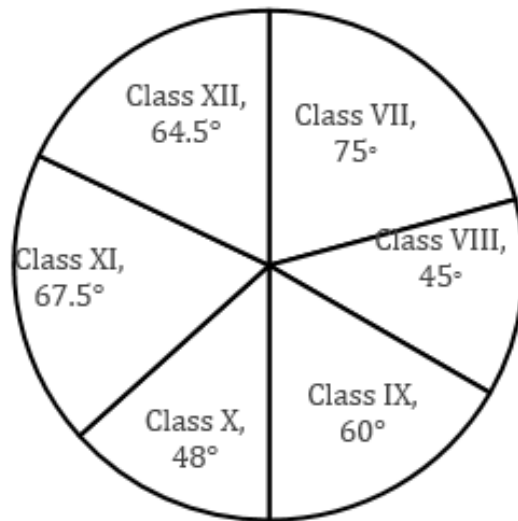
Q259. He distributed the amount that he got on selling cycle into his brother and sister in ratio of 1 : 2. Find what amount did his sister get (in Rs)?

- (a) 2700
- (b) 3100
- (c) 2900
- (d) 6200
- (e) 5800

Q260. If initial whole amount were invested in C.I. scheme for same time period and at the same rate of interest then how much more interest he will get from the previous one (in Rs)? (a) 48

- (b) 72
- (c) 24
- (d) 40
- (e) 36

Direction (261-265): Given Pie chart shows the degree wise distribution of students of six classes who attended a public seminar.



Note: - These students are from 3 different schools.

Total schools \Rightarrow D.A.V. schools + J.N.V. School + D.P.S. School

Q261. In class IX, 60% student who attended seminar are girls, in which distribution of girls, on the basis of school D.A.V, J.N.V and D.P.S is 2 : 3 : 1. If number of girls in IX class who attended seminar from J.N.V is 30, then find the total number of student who attended seminar from all schools and from all class.

- (a) 500
- (b) 600
- (c) 1000
- (d) 400
- (e) 800

Q262. Ratio between Girls in class X to boys in class XII who attended seminar is 4 : 5 and girls in class XII is $66\frac{2}{3}\%$ of total strength of class, then find the number of Boys in class X is what percent of total strength of class X?

- (a) $63\frac{1}{6}\%$
- (b) $69\frac{5}{6}\%$
- (c) $67\frac{1}{3}\%$
- (d) $65\frac{1}{3}\%$
- (e) $64\frac{1}{6}\%$

Q263. Find the ratio of number of students who attended seminar from class VII, X and XI together to number of students who attended seminar from class VIII, IX and XII together?

- (a) 13 :11
- (b) 131 : 130
- (c) 127 : 113
- (d) Cannot be determined
- (e) 113 : 111

Q264. Number of students in XI class from J.N.V who attended seminar is 75 which is 25% of the total student in class XI who attended seminar. If number of student in VIII class from D.A.V. who attended seminar is 60 than find the number of students in class VIII from J.N.V and D.P.S together

- (a) 140
- (b) 240
- (c) 320
- (d) 220
- (e) 280

Q265. Number of students in Class X who attended seminar are what percent of the number of student in class IX who attend seminar.

- (a) 60%
- (b) 75%
- (c) 65%
- (d) 80%
- (e) 50%

Directions (266-270): In the table, the total number of eligible voters of 5 villages with % valid votes out of total casted votes are given . Answer the question based on following data.

Note: In each village, 10% eligible voters did not cast their votes and only two person stand in the election

Village	Total voters	Valid votes
A	10000	60%
B	15000	55%
C	8000	80%
D	12000	90%
E	13500	80%

Q266. Find ratio b/w number of invalid votes casted in village C to the number of valid votes casted in village B.

- (a) 7 : 33
- (b) 32 : 165
- (c) 31 : 163
- (d) 17 : 154
- (e) None of these

Q267. If the winner got 52% of valid votes in village B. Find the no. of votes got by the person who lost?

- (a) 4500
- (b) 5578
- (c) 3200
- (d) 3564
- (e) 4578

Q268. Find the average number of valid votes of village A and village D together?

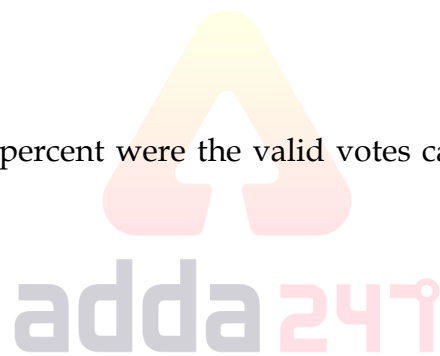
- (a) 7560
- (b) 5500
- (c) 6400
- (d) 6760
- (e) None of these

Q269. Find the number of votes by which the winner won in the election if the person who lose got 40% of valid votes in village E?

- (a) 2140
- (b) 1780
- (c) 1944
- (d) 1550
- (e) 1850

Q270. Find how much more/less percent were the valid votes casted in village C in comparison to village A?

- (a) $16\frac{2}{3}\%$
- (b) $7\frac{2}{7}\%$
- (c) $3\frac{2}{3}\%$
- (d) $5\frac{1}{3}\%$
- (e) $6\frac{2}{3}\%$



Directions (271-275): Given table shows the number of Cars manufactured and percentage of Cars sold by six companies in 2017. Answer the following questions based on given data-

Companies	In year 2017	
	Cars manufactured	Percentage of Cars sold (out of total manufactured)
A	620	40%
B	275	64%
C	320	37.5%
D	520	55%
E	485	60%
F	280	67.5%

Q271. Total number of Cars sold by Companies C and D together is what percent more/less than Cars that remain unsold by Companies B and E together? (rounded off to nearest integer).

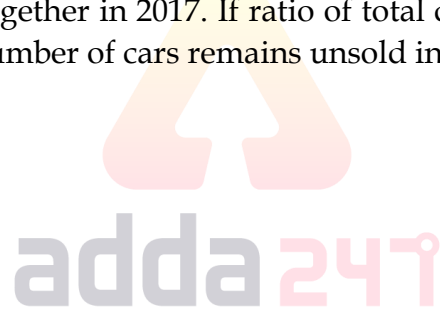
- (a) 52%
- (b) 39%
- (c) 48%
- (d) 35%
- (e) 25%

Q272. $66\frac{2}{3}\%$ of Cars sold by Company F were diesel cars and ratio between number of diesel and petrol cars manufactured in 2017 was 3 : 4, find number of petrol cars that remain unsold by F in 2017? (Consider only diesel and petrol cars were manufactured).

- (a) 97
- (b) 62
- (c) 117
- (d) 78
- (e) 107

Q273. In 2016, total cars manufactured by six companies together is 44% less than total cars manufactured by six companies together in 2017. If ratio of total cars sold to total cars manufactured in 2016 is 13: 20. Then, find total number of cars remains unsold in 2016?

- (a) 200
- (b) 250
- (c) 300
- (d) 350
- (e) 490



Q274. Company 'C' gets Rs. 2 lakh profit on selling each car and suffers a loss of Rs. 80,000 on every unsold car, find overall profit of Company C in 2017?

- (a) 45 lakh
- (b) 92 lakh
- (c) 80 lakh
- (d) 65 lakh
- (e) 75 lakh

Q275. Cars manufactured by Companies B, C and F together in 2016 was 40% more than the cars manufactured in year 2017 and car sold by B, C and F together are 80% more than cars sold by same companies in 2017. Find number of cars that remain unsold by given companies together in 2016?

- (a) 476
- (b) 628
- (c) 712
- (d) 532
- (e) 352

Direction (276-280): Table given below shows the total number of players in different sports Academy and percentage of Football players in each Academy. Study the following table carefully and answer the questions based on it.

Note: There are only two games played in each Academy i.e., Football and Cricket and each player plays only one game

Sports Academy	Total Players	Percentage of Football players
K	360	45%
L	350	70%
M	660	$33\frac{1}{3}\%$
N	640	$62\frac{1}{2}\%$
X	480	40%
Y	440	55%

Q276. Number of cricket players in 'L' and 'M' sports Academy together is what percent of the number of Football players in 'N' sports Academy?

- (a) 152%
- (b) $147\frac{1}{4}\%$
- (c) 132%
- (d) $136\frac{1}{4}\%$
- (e) $142\frac{2}{3}\%$



Q277. Average number of cricket players in 'N' and 'X' sports Academy together is how much more/less than the average number of Football players in 'K' and 'Y' sports Academy together?

- (a) 54
- (b) 62
- (c) 72
- (d) 68
- (e) 84

Q278. Number of males playing cricket in 'N' sports Academy is 40% more than the number of females playing same game in same sports Academy & males playing cricket in 'X' sports Academy is 240. Find total number of females playing cricket in 'N' and 'X' sports Academy together?

- (a) 154
- (b) 168
- (c) 142
- (d) 148
- (e) 164

Q279. $14\frac{2}{7}\%$ of football players left sports Academy 'L' & joined sports Academy 'M'. Find the new ratio of cricket players in sports Academy 'M' to Football players in sports Academy 'M'?

- (a) 88 : 51
- (b) 51 : 88
- (c) 83 : 53
- (d) 53 : 83
- (e) 81 : 53

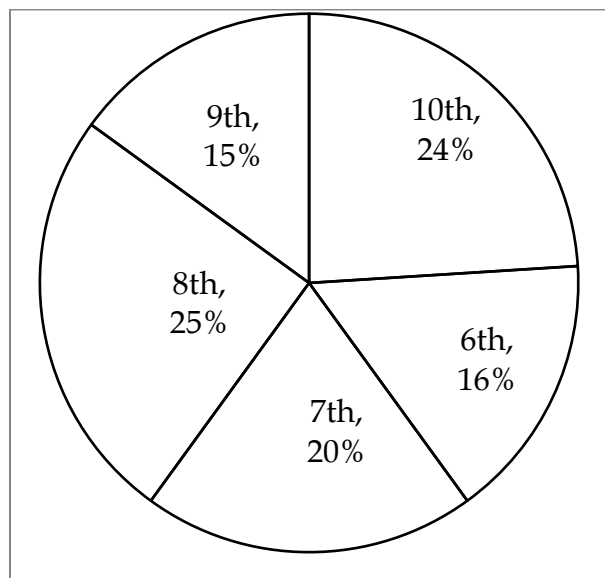
Q280. If ratio of male to Female players in sports Academy 'X' playing cricket is 1 : 2 and ratio of female to male playing same game in sports Academy 'L' is 3 : 4 then, males players playing cricket in sports Academy 'X' are what percent of females playing cricket in sports Academy 'L'?

- (a) 207%
- (b) $231\frac{1}{3}\%$
- (c) 223%
- (d) $217\frac{2}{3}\%$
- (e) $213\frac{1}{3}\%$

Directions (281-285): Study the pie-chart carefully and answer the questions.

Pie-chart given below shows the percentage distribution of students in different class of school 'RPM'
Note → Ratio of total student of school RPM to school SVM is 2 : 3 and both school has 5 class only i.e. class 6 to class 10

Number of students in 10th class of RPM school is 360



Q281. If total student in 6th class in school SVM is 20% of total student then find difference of student in 6th class in both school?

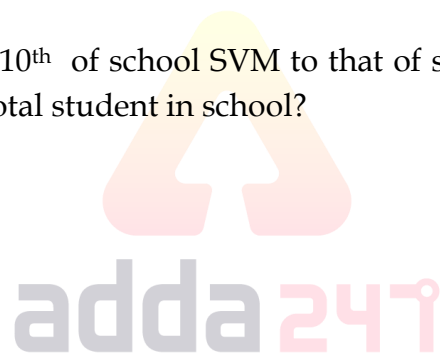
- (a) 120
- (b) 310
- (c) 230
- (d) 210
- (e) 180

Q282. If boys in school RPM in 8th class is 125 then girls in 8th class are what percent of total student in same school?

- (a) $16\frac{2}{3}\%$
- (b) $14\frac{2}{7}\%$
- (c) $12\frac{1}{2}\%$
- (d) $16\frac{1}{3}\%$
- (e) 12%

Q283. If ratio of students in class 10th of school SVM to that of school RPM is 1 : 2 then students in class 10th in SVM is what percent total student in school?

- (a) 9%
- (b) 6%
- (c) 8%
- (d) 4%
- (e) 12%



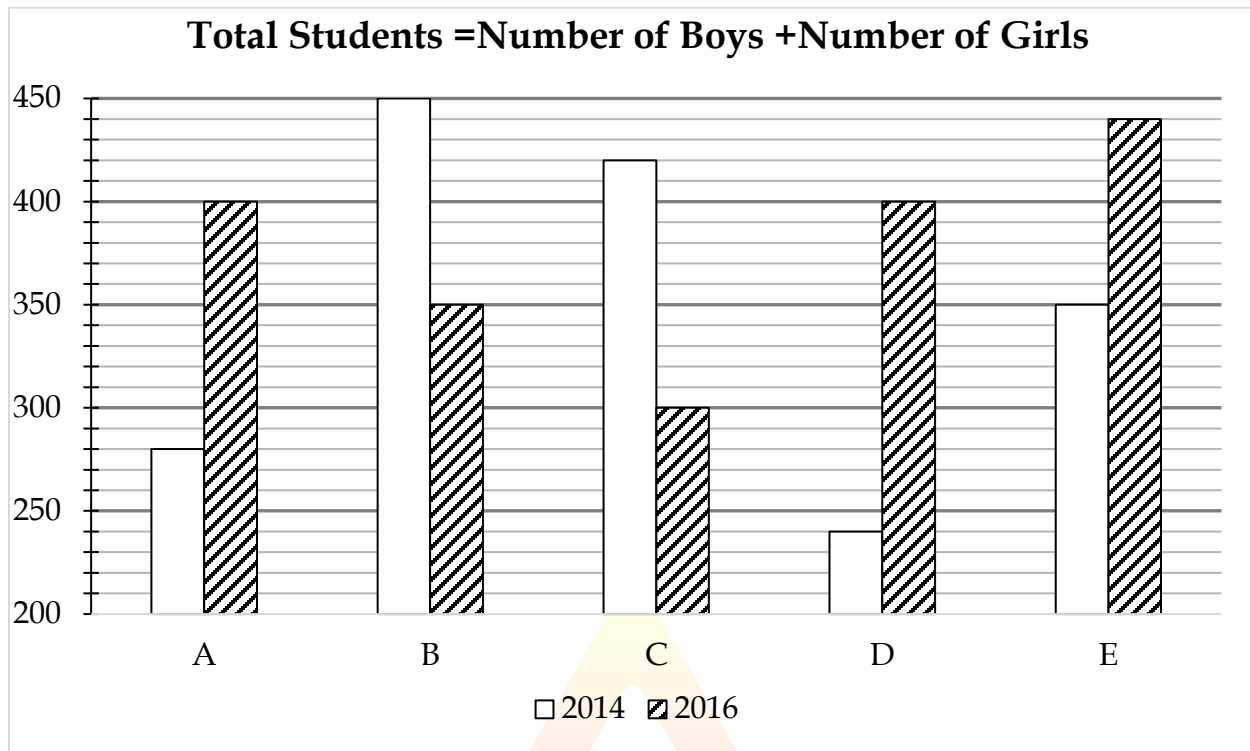
Q284. Find the average no. of students in class 8th and 9th of school SVM if percentage distribution is same as school RPM?

- (a) None of these
- (b) 425
- (c) 400
- (d) 250
- (e) 450

Q285. If total girls in school RPM is 600 then total boys in school RPM is what percent of total student in SVM?

- (a) 40%
- (b) 30%
- (c) 35%
- (d) None of these
- (e) 50%

Direction (286-290): The given bar graph shows the total number of students in five different schools in two different years. Read the data carefully and answer the questions.



Q286. Total number of students in school A and C together in year 2014 is what percent more or less than the total number of students in school A and E together in year 2016.

- (a) 25%
- (b) 20%
- (c) $13\frac{1}{3}\%$
- (d) $16\frac{2}{3}\%$
- (e) 15%

Q287. What is the ratio of average number of shirts sold by A and B together in year 2014 to average number of shirts sold by same stores together year 2016.

- (a) 73 : 75
- (b) 71 : 75
- (c) 71 : 73
- (d) 69 : 73
- (e) 75 : 73

Q288. In school D, there are 55% girls in year 2014 and $62\frac{1}{2}\%$ girls in year 2016. Number of boys in school D in both the year is approximately what percent of the total number of girls in same school in both the year.

- (a) 65%
- (b) 60%
- (c) 68%
- (d) 72%
- (e) 75%

Q289. Find the difference between the average of the number of students in school A, B and C in year 2016 and the average of the number of students in school B, C and D in year 2014.

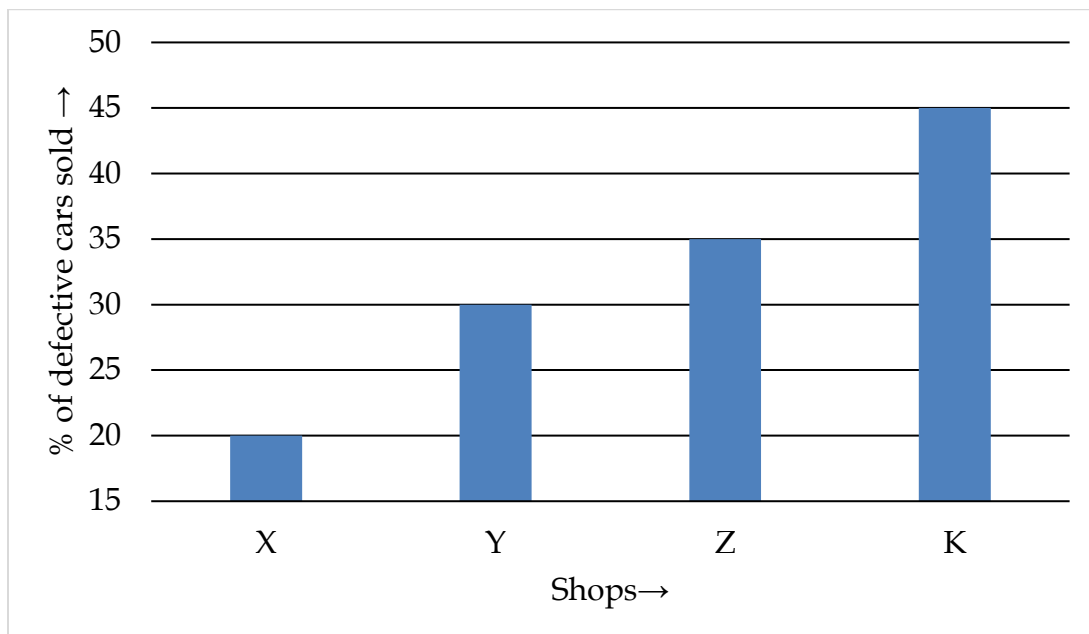
- (a) 20
- (b) 30
- (c) 25
- (d) 15
- (e) 10

Q290. Find the average of the number of students in both the years in school B, C and D.

- (a) 680
- (b) 720
- (c) 750
- (d) 700
- (e) 650

Directions (291-295): Study the bar-graph carefully & answer the following questions.

Bar-graph given below shows the percentage of total defective cars sold out of total cars sold by four different shops. Total cars sold by four shops = 1200. Ratio between cars sold by X : Y : Z : K = 1 : 3 : 2 : 4



Q291. Defective cars sold by shops Y & K together are how much more/less than total non-defective cars sold by shop Z?

- (a) 124
- (b) 178
- (c) 194
- (d) None of these
- (e) 168

Q292. Non-defective cars sold by shop X is approximately what percent of defective cars sold by shop K?

- (a) 52%
- (b) 44%
- (c) 36%
- (d) 64%
- (e) 58%

Q293. Find the average number of defective cars sold by all the shops together?

- (a) 128
- (b) 112
- (c) 108
- (d) 132
- (e) 106

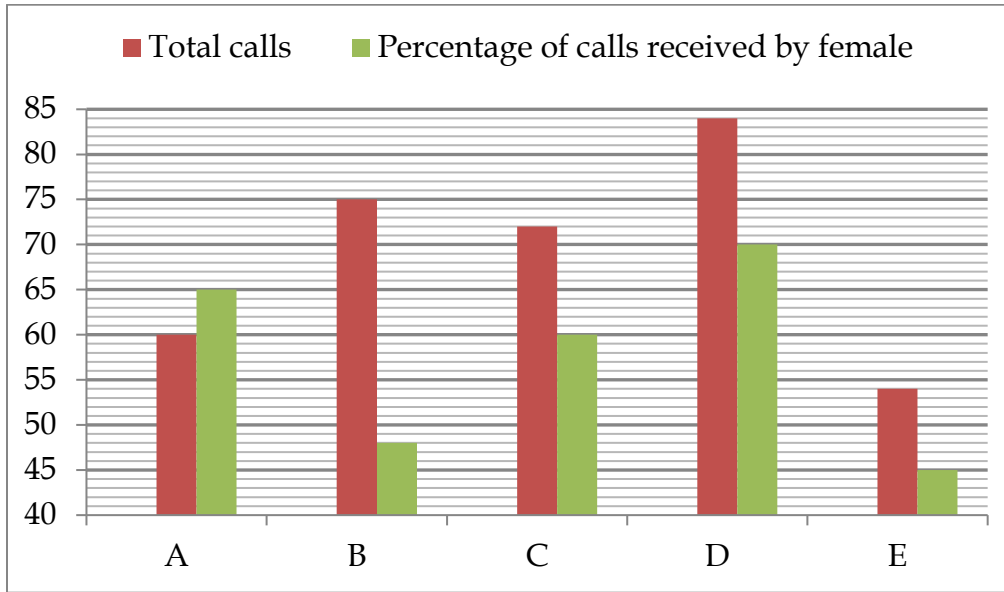
Q294. Find the ratio between $\frac{2}{3}$ rd of cars sold by shop X & K together to total non-defective cars sold by shop Y & Z together?

- (a) None of these
- (b) 60 : 61
- (c) 55 : 56
- (d) 50 : 51
- (e) 20 : 21

Q295. If 25% of defective cars sold by shop Y are returned back to the same shop, then find total cars which are sold (defective and non-defective) by shop Y?

- (a) 388
- (b) None of these
- (c) 288
- (d) 324
- (e) 333

Direction (296 – 300): Given below bar graph shows total number of calls (in hundred) received by five mobile network companies and percentage of calls received by female. Read the data carefully and answer the questions.



Q296. Find the sum of total calls received by male in company A & D together and calls received by female in company B & E together?

- (a) 9900
- (b) 10880
- (c) 11260
- (d) 10650
- (e) 9580

Q297. Find difference between total calls received by male in company C & E together and total calls received by female in company D?

- (a) 40
- (b) 20
- (c) 50
- (d) 30
- (e) 60

Q298. Find ratio between total calls received by female in company A to total calls received by male in company B?

- (a) 2 : 1
- (b) 3 : 1
- (c) 4 : 1
- (d) 5 : 1
- (e) 1 : 1

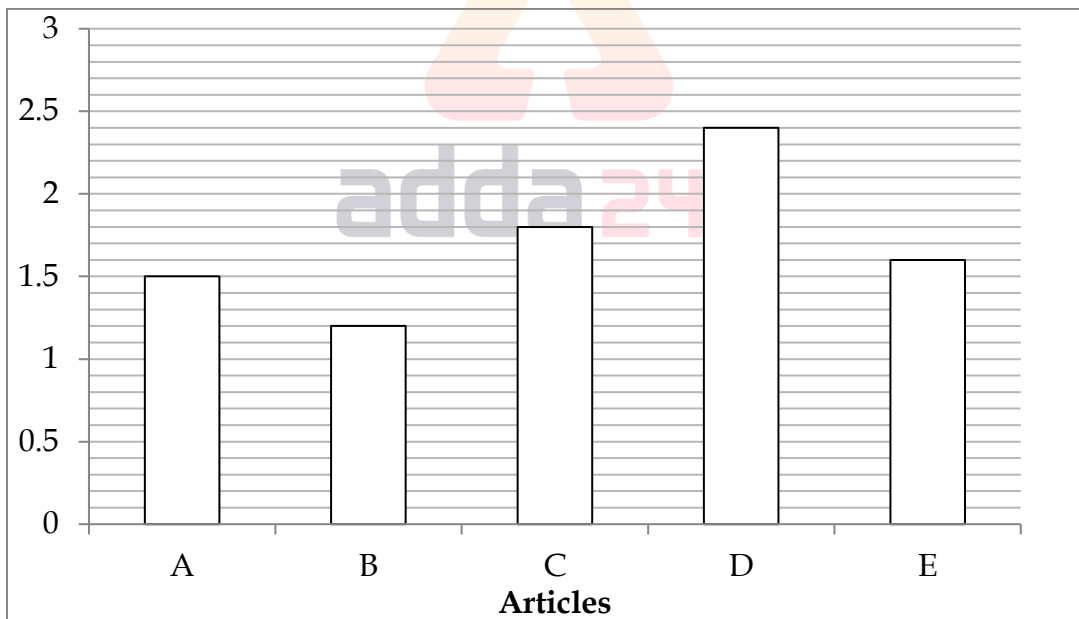
Q299. Total calls received in company F is 60 % more than total calls received by female in company A. If out of total calls received in company F, 75% calls received by female, then find average number of calls received by male in company F & D?

- (a) 2020
- (b) 2060
- (c) 2040
- (d) 2080
- (e) 2100

Q300. Find total number of calls received by male in company A, C & E together?

- (a) 7940
- (b) 7930
- (c) 7910
- (d) 7980
- (e) 7950

Directions (301-305): Given bar graph shows the ratio of marked price to selling price of five articles sold by a shopkeeper. Read the information carefully and answer the following questions.



Q301. What is the discount% on article B.

- (a) 20%
- (b) $16\frac{2}{3}\%$
- (c) 40%
- (d) $8\frac{1}{3}\%$
- (e) 50%

Q302. If mark price of article C is 200% above cost price then find the profit % on selling article C.

- (a) $33\frac{1}{3}\%$
- (b) $16\frac{2}{3}\%$
- (c) $66\frac{2}{3}\%$
- (d) $48\frac{1}{2}\%$
- (e) 50%

Q303. On article E shopkeeper earn 50 Rs. which is 20% of C.P. what is the difference between cost price and mark price of article.

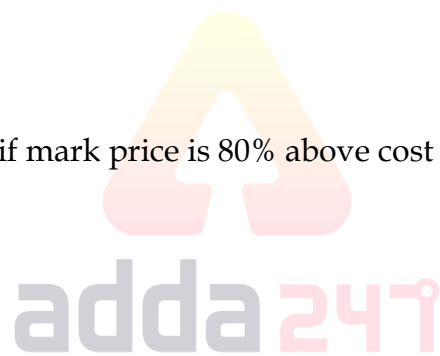
- (a) 240 Rs.
- (b) 210 Rs.
- (c) 245 Rs.
- (d) 230 Rs.
- (e) 235 Rs.

Q304. Mark price of article D is 264 Rs. If profit is 30 Rs. then find the profit % on it.

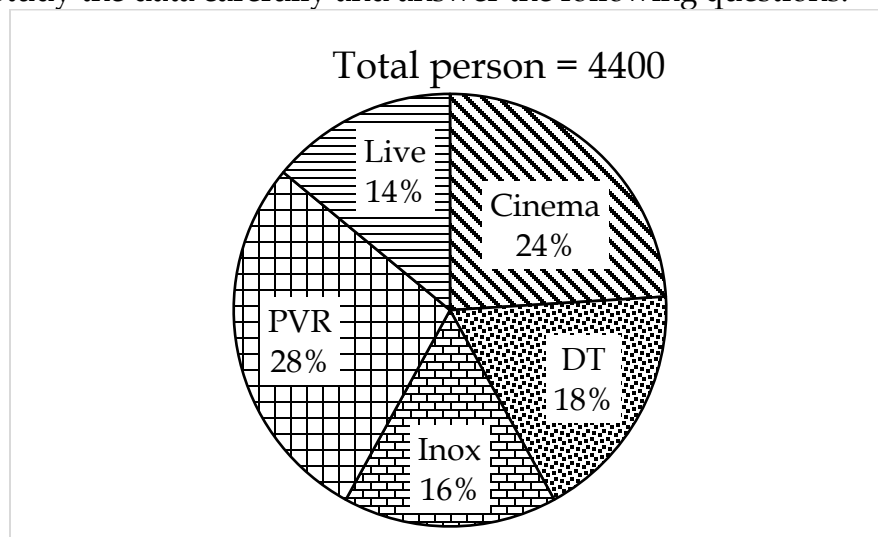
- (a) 32%
- (b) 37.5%
- (c) 12.25%
- (d) 25%
- (e) 27%

Q305. Article A has cost of 200 Rs. if mark price is 80% above cost price then find value of discount on it.

- (a) 200 Rs.
- (b) 150 Rs.
- (c) 120 Rs.
- (d) 110 Rs.
- (e) 140 Rs.



Directions (306-310): Pie-chart given below shows number of persons come to watch movies in five different theaters. Study the data carefully and answer the following questions.



Q306. If Ratio of male and female come in PVR theatre to watch movies is 4 : 7. Then find the difference between number of male to number of female come in PVR theatre to watch movie.

- (a) 448
- (b) 784
- (c) 224
- (d) 336
- (e) 360

Q307. 'Cinema' theatre shows three movies. 25% of person watch Padmavat, $\frac{100}{3}$ % of person watch padman and remaining watch 'College Diaries'. Find the average number of person who watch Padmavat and College Diaries.

- (a) 340
- (b) 352
- (c) 368
- (d) 374
- (e) 382

Q308. $\frac{50}{3}$ % of the person came in DT cinema bought popcorn. $\frac{200}{3}$ % of the person bought pepsi and remaining person bought both the items. Find the total number of person who bought atleast one item?

- (a) 726
- (b) 583
- (c) 440
- (d) 550
- (e) 660

Q309. Find the difference between the person who visit Cinema and DT theatre together to the person who visit LIVE & INOX theatre together?

- (a) 462
- (b) 484
- (c) 506
- (d) 352
- (e) 528

Q310. Person come to DT theatre is what percent of the person who come to Cinema theatre?

- (a) 50%
- (b) $\frac{200}{3}$ %
- (c) 75%
- (d) $\frac{250}{3}$ %
- (e) $\frac{400}{3}$ %

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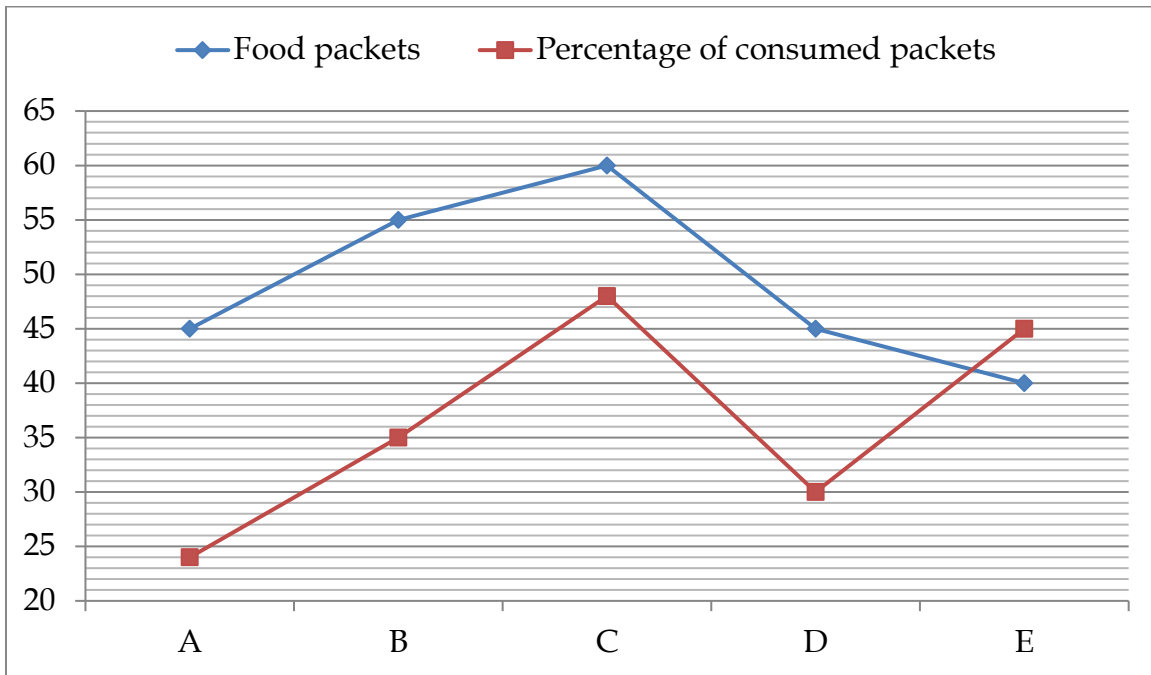


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Direction (311-315): Given below line graph shows number of food packets (in hundred) distributed by Kerala government in 5 cities which are flood affected and graph also shows percentage of packets consumed by people in these five cities. Read the data carefully and answer the questions.

Note- Total packet in any city= Consumed packets + Unconsumed packets



Q311. If total number of packets distributed in city X is $33\frac{1}{3}\%$ more than that of total unconsumed packets in the city C and total 35% people consumed packets in city X, then find difference between total unconsumed packets in city X and A?

- (a) 300
- (b) 320
- (c) 360
- (d) 716
- (e) 240

Q312. Find the ratio of difference between consumed food packets in city A & E to the difference between consumed food packets in the city B & D?

- (a) 144 : 115
- (b) 144 : 125
- (c) 144 : 119
- (d) 144 : 109
- (e) 144 : 135

Q313. 55% of total consumed food packets in city C are consumed by male, then find total food packets consumed by female in same city is approximately what percent of total unconsumed food packets in city A?

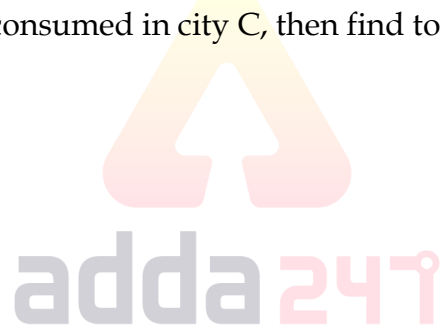
- (a) 42%
- (b) 44%
- (c) 46%
- (d) 38%
- (e) 48%

Q314. Find the sum of number of unconsumed food packets in city A, B, C & E?

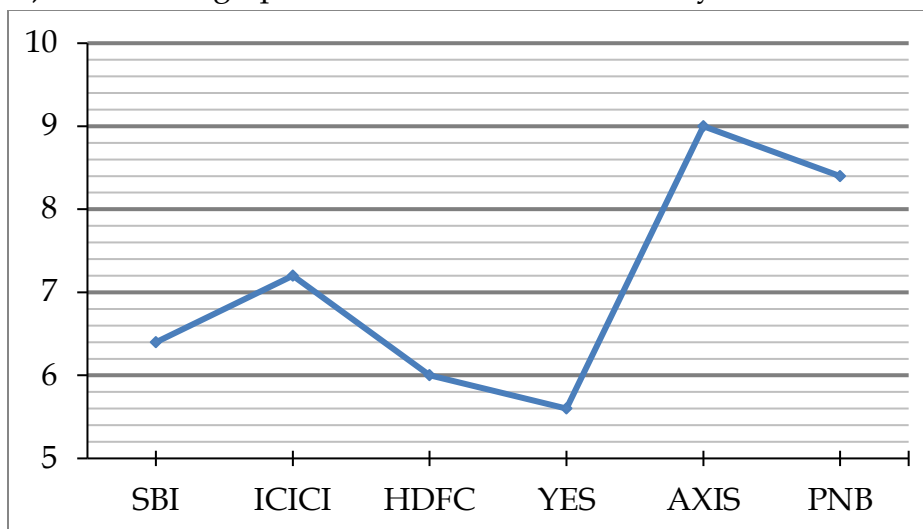
- (a) 13045
- (b) 12315
- (c) 13040
- (d) 12055
- (e) 13025

Q315. If total food packets distributed by Kerala government in all cities including these five cities is 925% more than total food packet consumed in city C, then find total food packets distributed in other cities except these five cities?

- (a) 5040
- (b) 5060
- (c) 5020
- (d) 5080
- (e) 5000



Directions (316-320): Given line graph shows the interest offered by 6 banks on Home loans



Note: All loans on S.I. unless mentioned in the question.

Q316. A man took loan from ICICI and HDFC loan offers in the ratio of 6 : 5 respectively . If he pay total Rs.14640 as interest at the end of 2 year. Then find the total amount he borrowed.

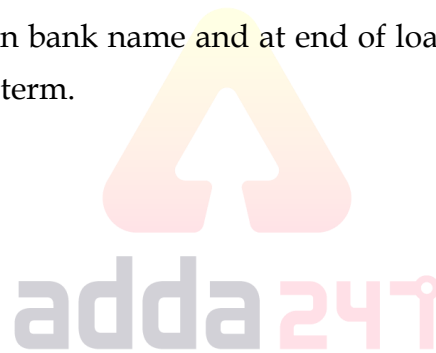
- (a) 50000
- (b) 110000
- (c) 60000
- (d) 90000
- (e) None of these

Q317. A man borrowed loan from SBI and Yes bank. At the end of 3 years he pay interest 6720 Rs. to both bank equally. Then find difference of amount borrowed by him?

- (a) 8000
- (b) 4000
- (c) 8000
- (d) 5000
- (e) None of these

Q318. Ram compare the interest rate of HDFC and Axis bank and then choose the lower rate for its loan. But by mistake he confused in bank name and at end of loan term he pay $11\frac{7}{13}\%$ more than he expected. Find the time of his loan term.

- (a) 4 years
- (b) 6 years
- (c) 5 years
- (d) 8 years
- (e) None of these



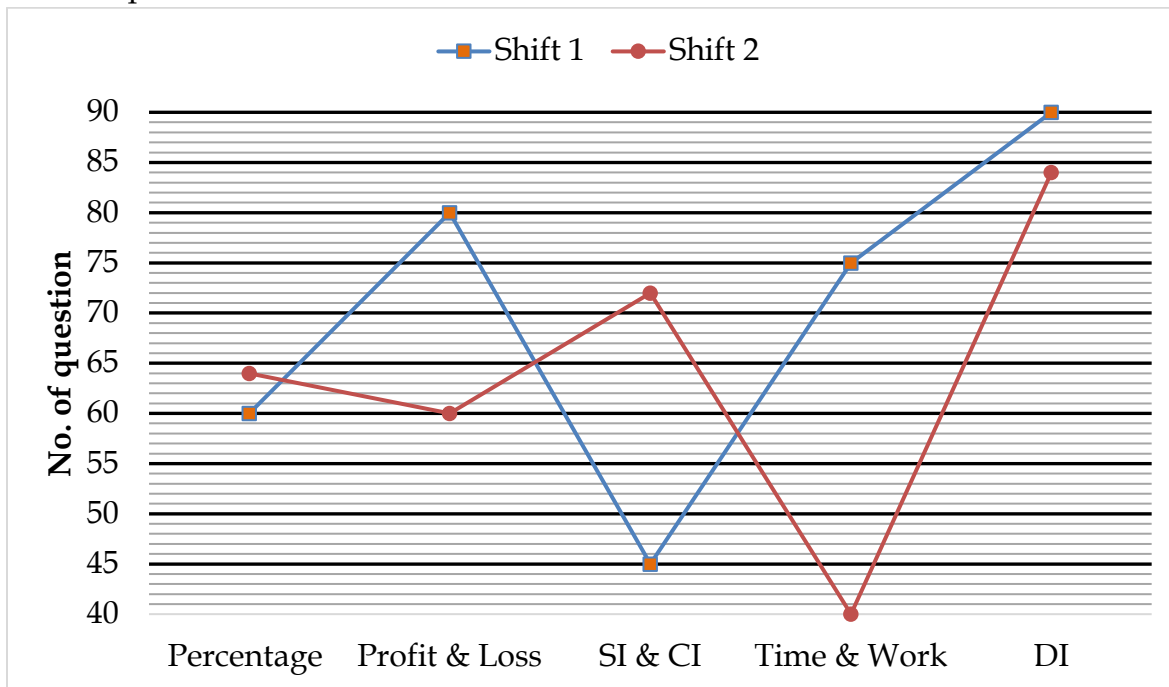
Q319. If loan borrowed from PNB and SBI is same then what is the ratio of amount paid at the end of 3 years to banks.

- (a) 310 : 291
- (b) 313 : 301
- (c) 310 : 298
- (d) 313 : 297
- (e) 313 : 298

Q320. What is the difference of the Interest paid by a borrower when he borrowed Rs 80000 from ICICI and Axis both to that from SBI and HDFC after 2 years ?

- (a) Rs. 6080
- (b) Rs. 7650
- (c) Rs. 6400
- (d) Rs. 5040
- (e) None of these

Directions (321-325): Study the following line graph carefully and answer the following questions. The line graph shows the no. of questions asked from different topics of quantitative aptitude in two shifts of SBI clerk prelims exam.



Q321. No. of questions asked in shift 1 from SI & CI is what percent of no. of questions asked from time and work in the same shift?

- (a) 60%
- (b) 50%
- (c) 55%
- (d) 64%
- (e) 75%

Q322. Find the average no. of questions asked from all the given sections in shift 2.

- (a) 46
- (b) 64
- (c) 48
- (d) 68
- (e) 74

Q323. What is the ratio of no. of questions asked from profit & loss and percentage together in shift 1 to the questions asked from profit & loss and time & work together in shift-2?

- (a) 6 : 5
- (b) 5 : 7
- (c) 7 : 5
- (d) 5 : 6
- (e) 8 : 7

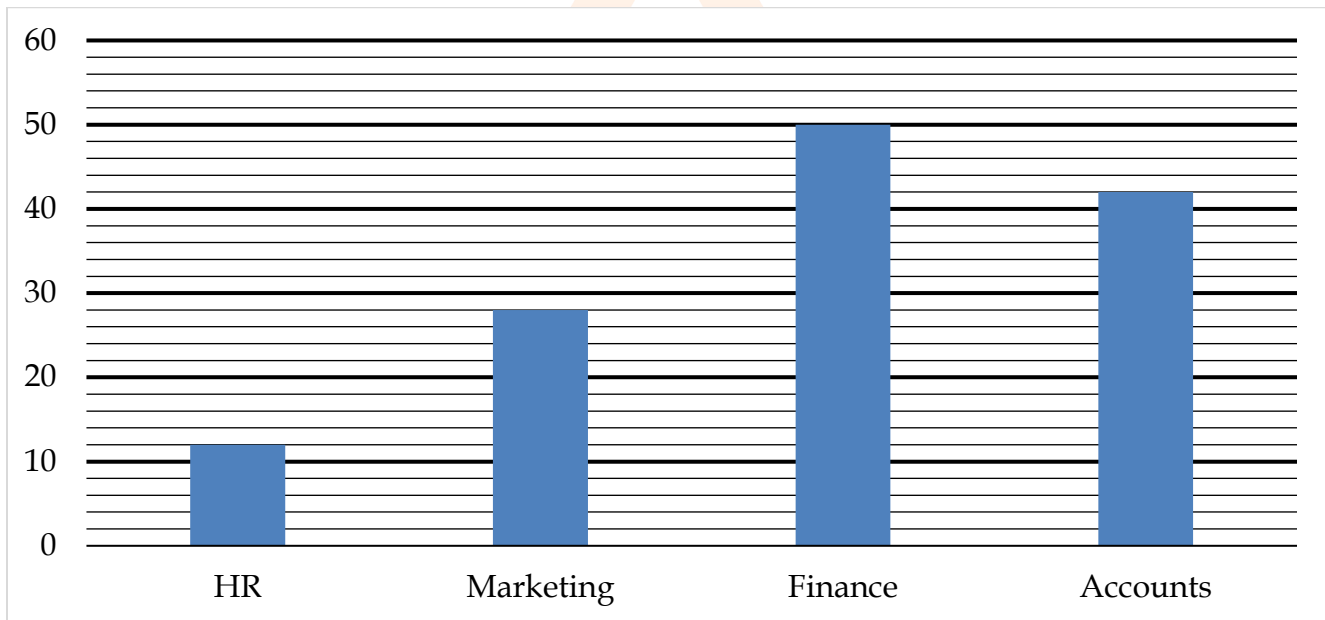
Q324. What is the difference between total no. of questions asked in both shifts from all the given sections together?

- (a) 45
- (b) 40
- (c) 35
- (d) 30
- (e) 60

Q325. Total no. of questions asked from DI in shift 2 are what percent less than that of DI in shift 1?

- (a) $5\frac{2}{3}\%$
- (b) $6\frac{2}{3}\%$
- (c) $4\frac{2}{3}\%$
- (d) 8%
- (e) $3\frac{2}{3}\%$

Direction (326-330): Bar chart given below shows number of males in four different departments in a company. Table given below shows percentage of females out of total employees in these departments. Study the data carefully and answer the following questions



Department	Percentage of females out of total employees
HR	76%
Marketing	30%
Finance	37.5%
Account	40%

Q326. Total number of females in HR and Marketing department together is how much more/less than total number of females in Finance and Accounts department together.

- (a) 16
- (b) 14
- (c) 12
- (d) 10
- (e) 8

Q327. Total number of employees in Accounts department is what percent more/less than total number of employees in HR department?

- (a) 60%
- (b) 20%
- (c) 40%
- (d) 80%
- (e) 50%

Q328. Total number of males in Content department is 25% more than total number of males in Marketing department, while total number of females in Content department is 40% more than total number of employees in Finance department. Find total number of employees in Content department?

- (a) 147
- (b) 105
- (c) 162
- (d) 120
- (e) 117



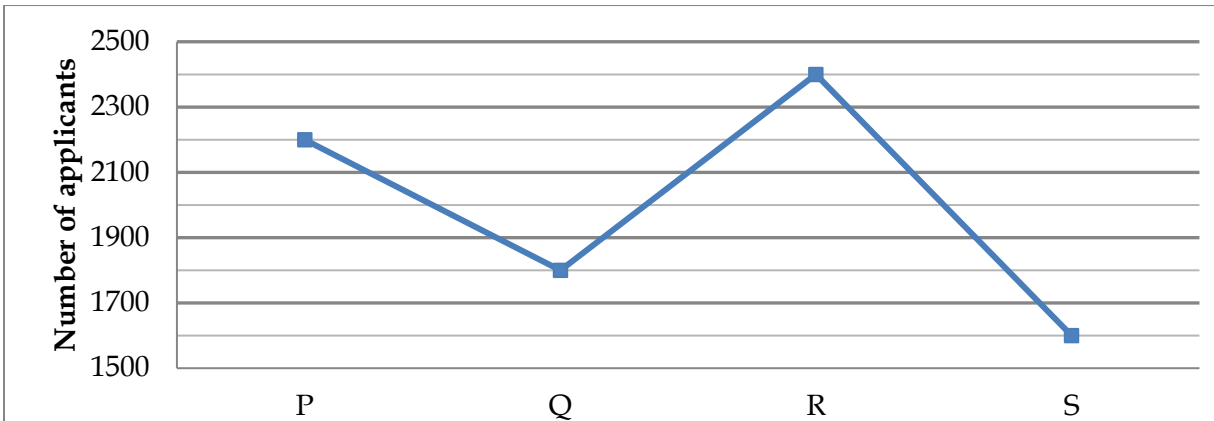
Q329. Total number of employees in Accounts department is how much more than total number of females in HR and Marketing department together?

- (a) 30
- (b) 20
- (c) 25
- (d) 35
- (e) 15

Q330. There is one typist per five employees in a department. Find total number of typist in all four departments together?

- (a) 240
- (b) 48
- (c) 220
- (d) 44
- (e) 46

Directions (331-335): The given line graphs show the total number of applicants who have applied for IBPS PO examination from four different cities and the table shows the ratio between number of male and female applicants. Read the data carefully and answer the following questions.



Cities	Male : Female
P	6 : 5
Q	5 : 4
R	3 : 5
S	3 : 2

Q331. The number of female applicants from cities P and R together is approximately what percent of the total number of male applicants from cities P and S together?

- (a) 110%
- (b) 112%
- (c) 108%
- (d) 116%
- (e) 120%

Q332. What is the average of all the female applicants from all the cities?

- (a) 965
- (b) 985
- (c) 995
- (d) 1005
- (e) 1015

Q333. The difference of the number of male applications from city P and female applications from city R is what percent more or less than the difference of the number of male and female applicants of city S.

- (a) $3\frac{1}{3}\%$
- (b) $6\frac{1}{2}\%$
- (c) 4%
- (d) $6\frac{1}{4}\%$
- (e) 5%

Q334. The number of applicants from another city T is $37\frac{1}{2}\%$ more than the average number of applicants from these four cities and the ratio of male to female applicants in this city is 11 : 14. Find the ratio of difference of the number of male and female applicants from city R to the difference of the male and female applicants from city T?

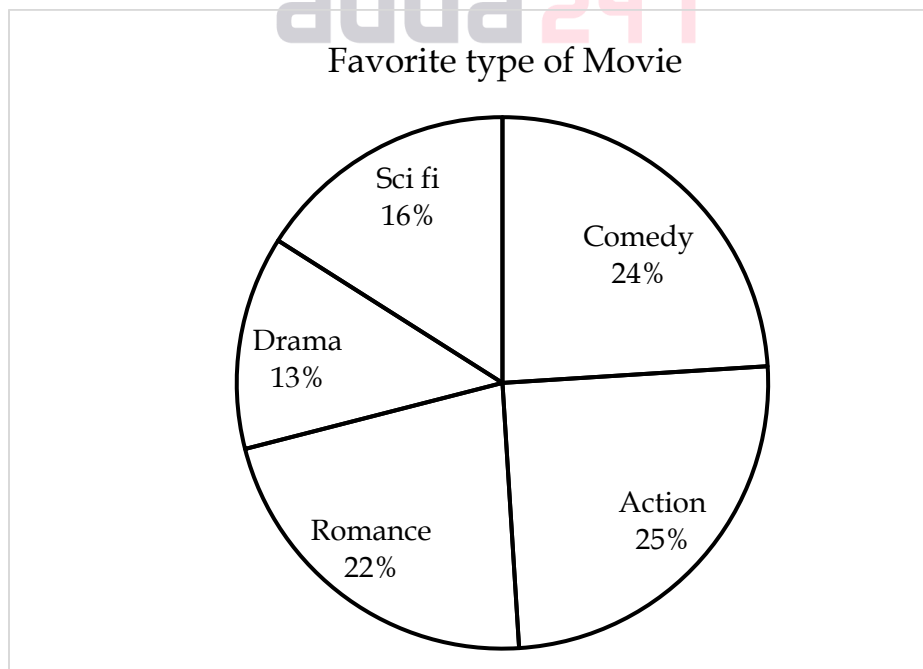
- (a) 20 : 9
- (b) 11 : 9
- (c) 20 : 11
- (d) 11 : 20
- (e) 9 : 20

Q335. Find the sum of the total number of male applicants from city P and Q and the number of female applicants from cities R and S?

- (a) 4240
- (b) 4340
- (c) 4440
- (d) 4540
- (e) 4640

Directions (336-340): Pie chart given below shows distribution of people based on a survey on their favorite type of movies.

Note: - No two persons have liked same type of movie.



Total People = 18,000

Q336. 40% people who like comedy movies are female which is 20% less than the females who like Romantic movies, then find the number of males who like romantic movies.

- (a) 1500
- (b) 2160
- (c) 1728
- (d) 1800
- (e) 1900

Q337. What is the difference in the number of people who like comedy and Action movies together to the people who like Sci fi and Drama movies together?

- (a) 3600
- (b) 7200
- (c) 4200
- (d) 3800
- (e) 4000

Q338. Find the average number of people who likes Scifi, Drama and Action movies together?

- (a) 3040
- (b) 3140
- (c) 3240
- (d) 3340
- (e) 3440

Q339. 35% of people who like Sci fi movies are males which is equal to the number of females who like Drama movies, then find the ratio of females who like Sci fi movies to the males who like Drama movies.

- (a) 37 : 52
- (b) 3 : 2
- (c) 2 : 3
- (d) 34 : 53
- (e) 52 : 37

Q340. Number of people who like Comedy and Scifi movies together is what percent of the people who don't like Romantic movies.

- (a) $\frac{2000}{39}$ %
- (b) 175%
- (c) 39%
- (d) $\frac{1000}{39}$ %
- (e) 75%

Directions (341-345): Data given below shows clothes in meters stitched by two different shops (A and B) in two different weeks. Shop 'A' stitched total 1600 m of clothes in week I and II together while shop 'B' stitched 240 m more in week I & 60 m less in week II than that of clothes stitched by shop 'A' in those weeks respectively. Wage of each worker of both the shops is Rs. 12,000/week while total wage paid to all the workers of both the shops is Rs. 14,40,000 for one week.

Q341. Number of male workers in both the shops is 14 more than that of female workers in both the shops. Find total number of male workers from both the shops?

- (a) 53
- (b) 67
- (c) 81
- (d) 60
- (e) 65

Q342. Find the quantity of clothes stitched by shop 'B' in two weeks together ?

- (a) None of the given option
- (b) 1680 m
- (c) 1740 m
- (d) 1780 m
- (e) can't be determined

Q343. Ratio between cloth stitched by shop A in week I to shop B in week II is 7 : 4. Find quantity of cloth stitched by shop B in week I.

- (a) 1220 m
- (b) 560 m
- (c) 620 m
- (d) 980 m
- (e) None of the given option

Q344. A man took 356 days to stitch clothes that are stitched by shop 'B' in week I and II together. Find in how many days that man can stitch clothes that are stitched by shop 'A' in week I and II together ?

- (a) 316 days
- (b) None of these
- (c) 320 days
- (d) 360 days
- (e) 256 days

Q345. If clothes stitched by shop 'A' in week I is 25% less than clothes stitched by shop 'B' in week II then find total clothes stitched by shop 'A' and 'B' together in week II ?

- (a) 1560 m
- (b) 1690 m
- (c) 1950 m
- (d) 1820 m
- (e) None of the given options

Directions (346-350): Read the given information carefully and answer the following questions.

Population of a village is 8192. Number of males is $27\frac{5}{9}\%$ more than number of females in that village. 45% females and 75% of males speak local language. Females who speak Hindi are 337 more than males who do not speak local language. Ratio of male to female speaking Hindi is 7 : 11. Every people of this village speak one of the three languages i.e. local language, Hindi and Dogri.

Q346. Total people speaking Hindi in that village is what percent of number of females in that village?

- (a) 60%
- (b) $62\frac{1}{2}\%$
- (c) 70%
- (d) $67\frac{1}{2}\%$
- (e) 75%

Q347. Find the difference between average number of females speaking Hindi and Dogri together and the females speaking local language?

- (a) 610
- (b) 630
- (c) 615
- (d) 625
- (e) 635

Q348. 75% of males speaking local language are doing agriculture while remaining of males are doing job and business in the ratio of 4 : 3. Then number of males doing job are what percent of total male population ?

- (a) 25%
- (b) 20%
- (c) $22\frac{1}{2}\%$
- (d) $17\frac{1}{2}\%$
- (e) 30%

Q349. Find ratio between females speaking local language to the total number of males speaking Hindi and females speaking Dogri together ?

- (a) 6 : 5
- (b) 7 : 6
- (c) 8 : 7
- (d) 10 : 9
- (e) 9 : 8

Q350. Find the average of females speaking Hindi and Dogri language together and the males who do not speak local language?

- (a) 1484
- (b) 1464
- (c) 1564
- (d) 1494
- (e) 1524

Direction (351-355): Read the data carefully and answer the questions.

There are 900 students in school 'X' and they like two Indian cricket players, i.e. either Virat Kohli or M.S. Dhoni. The ratio of boys to girls like M.S. Dhoni is 13 : 7 and total number of boys like Virat Kohli is 30 less than total number of girls like M.S. Dhoni. Total number of girls like Virat Kohli is 60 less than boys like Virat Kohli.

Q351. Find difference between total number of boys like M.S. Dhoni & total number of boys like Virat Kohli?

- (a) 210
- (b) 220
- (c) 225
- (d) 230
- (e) 250

Q352. Find the ratio between total number of Girls Like M.S. Dhoni to total number of Girls Like Virat kohli?

- (a) 8 : 5
- (b) 7 : 4
- (c) 7 : 3
- (d) 7 : 2
- (e) 7 : 9

Q353. Total number of boys like M.S. Dhoni & Virat Kohli together is what percent more than total number of girls like M.S. Dhoni & Virat Kohli together?

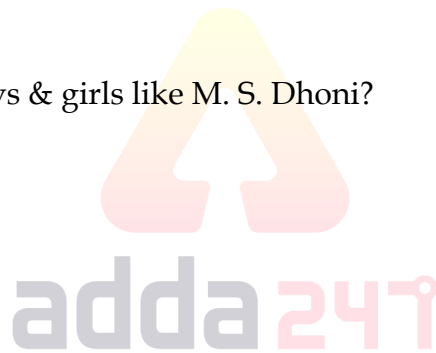
- (a) $63\frac{8}{11}\%$
- (b) $65\frac{8}{11}\%$
- (c) $71\frac{8}{11}\%$
- (d) $72\frac{8}{11}\%$
- (e) $75\frac{8}{11}\%$

Q354. In school 'Y' number of boys like M.S. Dhoni and Virat Kohli is $133\frac{1}{3}\%$ & 175% more than total number of girls like M.S. Dhoni & Virat Kohli in school 'X' respectively. Find difference between total number of boys like M.S. Dhoni & Virat Kohli together in school 'X' to total number of boys like M.S. Dhoni & Virat Kohli together in school 'Y'?

- (a) 225
- (b) 220
- (c) 230
- (d) 250
- (e) 260

Q355. Find average number of Boys & girls like M. S. Dhoni?

- (a) 300
- (b) 275
- (c) 320
- (d) 360
- (e) 250



Q356. The speed of boat in still water is 5 km/hr more than speed of current and the ratio of speed of boat in downstream to the speed of boat in still water is 4 : 3. Find downstream distance covered by boat in 3 hours.

- (a) 33 km
- (b) 30 km
- (c) 36 km
- (d) 39 km
- (e) 24 km

Q357. The length of train A is twice that of train B and speed of train A is half of that of train B. If train A crosses a man in 4 sec. then find how long will train B take to cross train A if they go in same direction.

- (a) 3s
- (b) 4s
- (c) 5s
- (d) 6s
- (e) None of these

Q358. A train crosses a bridge and a platform of length 450 m and 700 m in 20 sec and 30 sec respectively. Find the speed of the train.

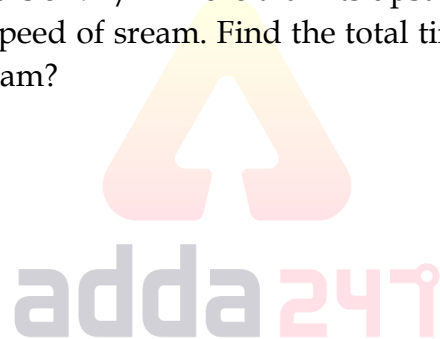
- (a) 25 m/s
- (b) 26 m/s
- (c) 25.5 m/s
- (d) 27 m/s
- (e) 28 m/s

Q359. The speed of a boat in still water is 5 km/hr and speed of current is 3 km/hr. If time taken to cover a certain distance upstream is 8 hours then how long will the boat take to cover the same distance downstream?

- (a) 2.5 hrs.
- (b) 3 hrs.
- (c) 2 hrs.
- (d) 3.5 hrs.
- (e) 1.5 hrs.

Q360. Downstream speed of a boat is 5 km/hr more than its upstream speed and the speed of boat in still water is 280% more than the speed of stream. Find the total time taken by boat to travel 42 km in downstream and 31.5 km in upstream?

- (a) 7 ½ hr
- (b) 8 hr
- (c) 9 hr
- (d) 9 ½ hr
- (e) 10 hr



Q361. While travelling in opposite direction, two trains of equal length crosses each other in 5 seconds. If the speed of trains are 72 km/hr and 40 ms^{-1} . Calculate the length of trains.

- (a) 300 meter
- (b) 150 meter
- (c) 120 meter
- (d) 90 meter
- (e) None of these

Q362. Speed of stream of river is 20% of speed of boat in downstream and time taken to cover 48 km in upstream is 4 hr. and speed of boat in still water is equal to speed of train A which cross a standing man in 36 sec. Then find length of train A ?

- (a) 220 m
- (b) None of these
- (c) 240 m
- (d) 120 m
- (e) 160 m

Q363. The ratio of time taken to run a certain distance by Ram and Mohan is 4 : 3 and thus Mohan wins the race by 360 m. what is the distance to race course ?

- (a) 1380 m
- (b) 1400 m
- (c) 1440 m
- (d) 1820 m
- (e) 1080 m

Q364. Find the speed of stream if a boat covers 36 km in downstream in 5 hours which is 3 hours less in covering the same distance in upstream.

- (a) 1.35 km/hr
- (b) 1.24 km/hr
- (c) 1.15 km/hr
- (d) 2.2 km/hr
- (e) None of these

Q365. Due to bad condition of road normal speed of car is reduced by 20 km/hr and it take 48 minutes more to cover 320 km. What time it takes to cover same distance with his normal speed?

- (a) 4.2 hour
- (b) 2.8 hour
- (c) 3.2 hour
- (d) 3.5 hour
- (e) 3.6 hour

Q366. Shyam goes to his office which is 96 km away from his home. He walks $12\frac{1}{2}\%$ of total journey and remaining distance covered by running. He walks at the speed of 8 km/hr and run at the speed of 12 km/hr. Find the time to cover the whole journey?

- (a) 6 hr
- (b) 8.5 hr
- (c) 7.5 hr
- (d) 8 hr
- (e) 9 hr

Q367. Time taken by boat to cover 164 km in upstream is 50% more than time taken by boat while returning. Find the time taken by man to cover 100 km in still water if speed of man is equal to speed of boat in still water and speed of stream is 10 km/hr?

- (a) 4 hr
- (b) 6 hr
- (c) 5 hr
- (d) 2 hr
- (e) 3 hr

Q368. Ratio between speed of boat in still water to downstream speed is 3 : 4 and boat takes 1 hour 40 minutes more to cover 80 km in still water than in downstream. Find time taken by boat to cover distance of 36 km in upstream?

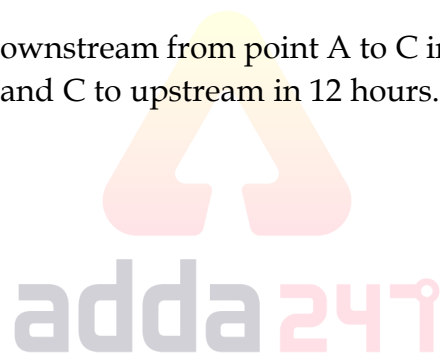
- (a) 4.5 hours
- (b) 5.5 hours
- (c) 3.5 hours
- (d) 2.5 hours
- (e) 1.5 hours

Q369. Ram starts his journey from city A to city B with the speed of 90 km/hr and from city B to C (city C is after city B) with the speed of 60 km/hr. If total distance between city A to C is 300 km and average speed of whole journey is 75 km/hr, then find the distance between city A to B?

- (a) 180 km
- (b) 120 km
- (c) 160 km
- (d) 200 km
- (e) 240 km

Q370. A man can row the boat in downstream from point A to C in 16 hours. But he return from point B, which is exactly mid-point of A and C to upstream in 12 hours. Find the ratio of speed of stream to the speed of man in still water ?

- (a) 1 : 5
- (b) 2 : 3
- (c) 3 : 2
- (d) 4 : 3
- (e) 5 : 3



Q371. Train A crosses a platform of 98 m length in 24 sec. Another Train B of same length as Train A crosses a pole in 12 sec. If speed of train A is 20% more than speed of train B. Find length of train A.

- (a) 80 m
- (b) 65 m
- (c) 70 m
- (d) 75 m
- (e) 90 m

Q372. Ratio of time taken by a man to cover a distance in upstream then in downstream is 3 : 2. If speed of stream is 2 km/h then in what time man will cover a distance of 36 km in upstream.

- (a) 4.5 hours
- (b) 6 hours
- (c) 3 hours
- (d) 3.6 hours
- (e) 5 hours

Q373. A train moving at a speed of 70 m/s crosses a man moving at a speed of 5 m/s in opposite direction of train in 2 sec. Find the time taken by the train to cross another train of length 120 m travelling at speed of 55m/s in same direction.

- (a) 15 sec.
- (b) 10 sec.
- (c) 12 sec.
- (d) 18 sec.
- (e) 20 sec.

Q374. A thief robbed a shop and ran in a car at a speed of 60 km/h at 11:00 am. The Police located the position of thief and ran after him at 11:15 a.m. from shop in a car at 65 km/h. Find the time at which the thief will be caught?

- (a) 2 : 00 p.m
- (b) 3 :15 p.m
- (c) 3 : 30 p.m
- (d) 2 : 30 p.m
- (e) 2 : 15 p.m

Q375. A train A moving with a speed of 80 m/s crosses another train B moving with speed of 65 m/s in same direction in $36\frac{2}{3}$ sec. At the same time, train A crosses a man sitting in one of the compartment of train B in 20 sec. Find ratio of length of train A and train B?

- (a) 5:6
- (b) 4:3
- (c) 6:5
- (d) 3:4
- (e) 2:3

Q376. In a solution of water and sugar, the ratio of sugar to water is 3 : 5. If 30% of this solution is taken out and 5% of the initial quantity of solution is added as water to the remaining quantity of the mixture then find the new ratio of sugar and water in the solution.

- (a) 6 : 13
- (b) 3 : 7
- (c) 7 : 13
- (d) 4 : 7
- (e) 1 : 2

Q377. 16 years hence, the age of Rashmi will be $\frac{10}{13}$ th of the age of her friend Neha and 8 years ago, the ratio of their age (Rashmi : Neha) was 4 : 7. Present age of Neha is what percent more than the present age of Rashmi?

- (a) 50%
- (b) 40%
- (c) 60%
- (d) 45%
- (e) 75%

Q378. Ratio of present age of A, B, C and D is 6 : 8 : 11 : 15 . Sum of their ages 4 years before was 64 years then what is the difference of present age of B and D.

- (a) 8 years
- (b) 14 years
- (c) 4 years
- (d) 22 years
- (e) None of these

Q379. A cistern contains 50 liters of water. 5 liters of water is taken out of it and replaced by the same quantity of wine. This process is repeated one more time. After that 10 liters of solution is replaced by the same quantity of rum. Find the proportion of wine, water and rum in the final mixture.

- (a) 1 : 4 : 6
- (b) 41 : 50 : 43
- (c) 19 : 81 : 25
- (d) 81 : 19 : 25
- (e) None of these

Q380. A vessel contains mixture of milk and water in the ratio of 3 : 8. $\frac{1}{4}$ th of the mixture taken out and replaced with mango juice and this process repeated one more time. If the quantity of milk in final mixture is 40.5 liters, then find the initial quantity of water in the mixture?

- (a) 184 L
- (b) 196 L
- (c) 190 L
- (d) 192 L
- (e) 188 L

Q381. Sum of ages of Veer and Sameer is six years more than twice the age of Divyaraj and Sum of ages of Veer & Ayush is twice the age of Divyaraj. If the average age of Sameer & Ayush is 25 years and average age of all four is 25 years, then find the difference between the age of Veer and Divyaraj?

- (a) 2 years
- (b) 4 years
- (c) 6 years
- (d) 8 years
- (e) 1 years

Q382. Milk and Mango Juice are mixed in the ratio of 2 : 3. Naturally there is 90% water in milk and 80% water in mango juice. Now 10 liters of water is poured into the mixture and percent of water becomes $86\frac{2}{3}\%$. Find the initial quantity of water in milk.

- (a) 18 liters
- (b) 20 liters
- (c) 22 liters
- (d) 24 liters
- (e) None of these

Q383. Present ages of A and B is in ratio of 7: 8. Ratio of present ages of A's two sisters is 3 : 4. If A is 11 year younger than elder sister and younger sister is of same age as 'B', then find the sum of ages of all four members 10 years hence.

- (a) 101 years
- (b) 145 years
- (c) 131 years
- (d) 125 years
- (e) 141 years

Q384. A vessel contains 240 l mixture of milk & water in the ratio of 5 : 3. 64l of mixture taken out from vessel and 14 l water is added to the remaining mixture. If again 76l of mixture taken out from vessel then, find milk percentage in final mixture ?

- (a) $52 \frac{17}{19} \%$
- (b) $55 \frac{17}{19} \%$
- (c) $57 \frac{17}{19} \%$
- (d) $53 \frac{17}{19} \%$
- (e) $54 \frac{17}{19} \%$

Q385. The sum of age of P and Q, 6 years ago is 82 years. Q's age 14 years ago is equal to the present age of P. Then find age of P after 4 years?

- (a) 42 yrs
- (b) 44 yrs
- (c) 46 yrs
- (d) 48 yrs
- (e) 50 yrs

Q386. A vessel contains 288 l mixture of milk and water in the ratio of 11 : 7. Some quantity of mixture is taken out and replaced with the same quantity of water and the new ratio of milk and water in the vessel becomes 11 : 13. Find the ratio of the amount of water in initial mixture to that of in final mixture?

- (a) 28 : 39
- (b) 26 : 39
- (c) 24 : 41
- (d) 28 : 43
- (e) 29 : 41

Q387. There are two vessels A and B containing 20 lit of pure milk and 25 lit of water respectively. If 10 lit of pure milk is taken from vessel A and poured into B and again 21 lit of mix is taken out from B and poured into A then find the ratio between milk to water in vessel A.

- (a) 15 : 14
- (b) 15 : 13
- (c) 3 : 2
- (d) 4 : 3
- (e) 16 : 15

Q388. A mixture of milk and water has 62% of milk content. Another mixture has 17% of water content. What quantity of mixture of 62% milk content is mixed with 8 lit of mixture of 83% milk content to prepare a new mixture of 69% milk content?

- (a) 14lit
- (b) 16lit
- (c) 18lit
- (d) 12lit
- (e) None of these

Q389. Present age of father is 6 year more than twice of the present age of his son. Four years later, average age of father and son will be 34 years. Find ratio of present age of son to that of father?

- (a) 7:3
- (b) 2:1
- (c) 5:2
- (d) 11:6
- (e) 9:4

Q390. A vessel contains 96ℓ of mixture of milk and water in the ratio of 5 : 3 respectively. If 24ℓ of mixture taken out and some quantity of milk and water added in the ratio of 3 : 5 so the new ratio of milk and water becomes 15 : 13. Find quantity of water added ?

- (a) 12.5 ℓ
- (b) 15 ℓ
- (c) 25 ℓ
- (d) 7.5 ℓ
- (e) 30 ℓ

Q391. A shopkeeper mixed X kg tea of one variety cost Rs 260 per kg and (X+8) kg tea of other variety cost Rs 320 per kg and after selling the mixture at Rs 357 per kg, he got a profit of 20%. Find the value of X?

- (a) 8 kg
- (b) 10 kg
- (c) 12 kg
- (d) 15 kg
- (e) 16 kg

Q392. A shopkeeper sells every item at the profit of Rs. 42. If the SP of a bat is Rs. 322 & cost price of a ball is Rs.105. Find the overall profit% earned on selling a ball and a bat.

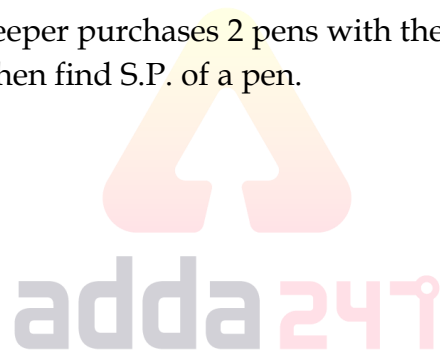
- (a) 40%
- (b) 15%
- (c) $21\frac{9}{11}\%$
- (d) 35%
- (e) None of these

Q393. Satish mixed 12 kg wheat of type A with 18 kg of wheat of type B. and sold the mixture at 20% above the price of type A wheat such that there is no profit obtained by Satish. Find ratio of price per kg of type A wheat to price per kg of type B wheat ?

- (a) None of these
- (b) 2 : 3
- (c) 3 : 4
- (d) 4 : 5
- (e) 4 : 3

Q394. After selling 5 pens a shopkeeper purchases 2 pens with the profit obtained after selling 5 pens. If he earns 20 Rs. on selling a pen then find S.P. of a pen.

- (a) Rs. 70
- (b) Rs. 60
- (c) Rs. 50
- (d) None of these
- (e) Rs. 56



Q395. A shopkeeper wants to sell one article at a profit of 20% and another article at a profit of $14\frac{2}{7}\%$ such that selling price of both the article is same. Find the ratio of cost price of both the articles?

- (a) 20 : 21
- (b) 10 : 9
- (c) 11 : 10
- (d) 8 : 7
- (e) 10 : 7

Q396. Anurag buys an old laptop for Rs. 17500 and spends Rs. 2,500 for its repair. He is not satisfied from his laptop and sells the laptop at Rs. 22,500. Find his profit percent?

- (a) 20%
- (b) 12.5%
- (c) 15%
- (d) $14\frac{2}{7}\%$
- (e) 25%

Q397. The selling price of 8 articles is equal to cost price of 12 article. Find the profit percent on selling one article?

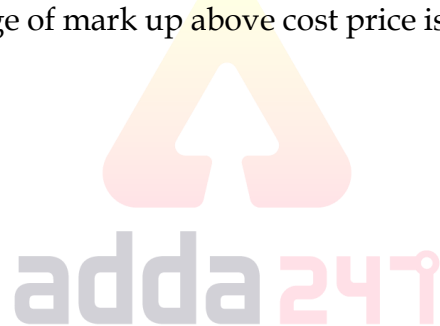
- (a) 67%
- (b) 25%
- (c) 50%
- (d) $42\frac{6}{7}\%$
- (e) 55%

Q398. S.P. of 4 shoes is equal to the profit on selling 12 Sandals and loss on selling 12 shoes equals to the S.P. of 6 sandals. Cost of a shoes is equal to one-third of cost of a sandal. What is ratio of S.P. of a shoes to S.P. of a sandal given that profit % is equal to the loss % ?

- (a) 9 : 2
- (b) 7 : 2
- (c) 9 : 7
- (d) 2 : 9
- (e) 7 : 6

Q399. Arun get a loss of Rs. 50 when he sold his watch at a discount of 20% on marked price. Find the cost price of article when percentage of mark up above cost price is equal to percentage discount given on M.P.

- (a) Rs. 1250
- (b) Rs. 950
- (c) Rs. 900
- (d) Rs. 1400
- (e) Rs. 800



Q400. P and Q each sold an article at equal price. P sold article at 10% profit and Q sold at $16\frac{2}{3}\%$ loss. P calculates profit percent on selling price whereas Q calculates it on cost price and there by both makes an overall loss of Rs. 1800. Find the average of cost price of P's article and Q's article ?

- (a) Rs.16,800
- (b) Rs. 18,900
- (c) Rs. 20,400
- (d) Rs. 22,600
- (e) Rs. 24,200

Q401. Veer can do a work in 5 days and Ayush can do the same work in 3 days. If ratio of efficiency of Veer to Ayush to complete the work is $(x - 4) : (x + 4)$, then find the value of x .

- (a) 8
- (b) 16
- (c) 18
- (d) 24
- (e) 12

Q402. 21 women can complete a piece of work in 20 days by working 10 hours a day. In how many days 21 men will complete the work by working 8 hrs a day if 3 men work as much as 5 women?

- (a) 18 days
- (b) 15 days
- (c) 16 days
- (d) 12 days
- (e) 10 days

Q403. A alone can complete a work in 36 days. B is $\frac{2}{3}$ rd as efficient as A and if $\frac{7}{9}$ th of the work is done by A and B together then the remaining work is completed by C alone in 24 days. In how many days, all the three will complete the whole work by working together.

- (a) 27 days
- (b) 12 days
- (c) 24 days
- (d) 15 days
- (e) 18 days

Q404. Arjun can complete a work alone in 12 days and with the help Tanya in 8 days. Find the number of days Tanya need to complete 75% of the work.

- (a) 10 days
- (b) 12 days
- (c) 18 days
- (d) 24 days
- (e) 36 days

Q405. Ratio of efficiency of Q and P to complete a work is 1 : 3 and they together do the same work in the same time as the time in which A and B together can do it. If A alone and B alone completes a work in 6 days and 8 days respectively then find the time taken to complete the same work by P alone?

- (a) None of these
- (b) 3 days
- (c) $6\frac{2}{3}$ days
- (d) $4\frac{4}{7}$ days
- (e) $4\frac{1}{3}$ days

Q406. A and B together can complete a piece of work in 36 days but the efficiency of B is $33\frac{1}{3}\%$ less than efficiency of A. Find in how many days 'B' alone can complete the whole work?

- (a) 80 days
- (b) 108 days
- (c) 54 days
- (d) 90 days
- (e) 72 days

Q407. 3 women or 5 men can earn Rs. 480 in a day. Find how much Rs. 7 men and 9 women will earn in 2 days?

- (a) Rs. 6,286
- (b) Rs. 4,224
- (c) Rs. 4,228
- (d) Rs. 3,224
- (e) Rs. 2,442

Q408. 12 men can do a piece of work in 6 days working 4 hours each day. Then in how many days 6 women can complete the same work working 8 hours a day if efficiency of 4 women can do the same work as single men ?

- (a) 16 days
- (b) None of these
- (c) 18 days
- (d) 12 days
- (e) 24 days

Q409. A can do $\frac{3}{5}$ th of a work in 24 days, while B can do $\frac{3}{4}$ th of work in 45 days. A and B start work and after 20 days C joined them. If total work complete in $23\frac{1}{3}$ days than find in how many days C alone can complete the work?

- (a) 96 days
- (b) 144 days
- (c) 168 days
- (d) 120 days
- (e) 180 days

Q410. A is 40% more efficient than B and both complete a work together in 16 days. If C & D takes $\frac{3}{4}$ th of time what A & B take together, then find In how many days B, C & D will complete the work together?

- (a) $12\frac{1}{7}$ days
- (b) $10\frac{1}{7}$ days
- (c) $6\frac{1}{7}$ days
- (d) $9\frac{1}{7}$ days
- (e) $4\frac{1}{7}$ days

Q411. Three pipes P, Q and R together can fill a cistern in 11 hours. If pipe P, Q and R opened together but after 6 hours 'Q' is closed and P and R fills the remaining cistern in 8 more hours then find in how much time pipe 'Q' can fill the cistern alone?

- (a) $29\frac{1}{3}$ hours
- (b) $28\frac{1}{2}$ hours
- (c) $14\frac{1}{2}$ hours
- (d) $27\frac{1}{3}$ hrs
- (e) $25\frac{1}{3}$ hrs

Q412. A special pump is used for both filling and emptying a tank. Rate of emptying capacity of pump is 10 m^3 per min higher than its filling capacity and the pump takes 8 minutes less to empty the tank than to fill it. If capacity of tank is 2400 m^3 then, find filling capacity of pump?

- (a) 50 m^3 per min
- (b) 60 m^3 per min
- (c) 25 m^3 per min
- (d) 40 m^3 per min
- (e) 15 m^3 per min

Q413. Two pipes A and B together can fill a cistern in 18 hours. Ratio of efficiency of pipe A and pipe B is 2 : 3. Find in what time cistern can be fully filled if pipes A and B are opened alternatively in a way that A alone is opened for first three hours and then B alone is opened for next 1 hour till the whole cistern get filled ?

- (a) 25 hours
- (b) 30 hours
- (c) 35 hours
- (d) 40 hours
- (e) 50 hours-

Q414. Three pipes P, Q and R can fill $\frac{7}{12}$ th part of cistern in 1 hr. P can fill $\frac{1}{2}$ th part of cistern in 1 hr and Q can fill $\frac{1}{3}$ rd part of cistern in 1 hr while R can empty the cistern in certain time. Find the time required by R to empty the cistern?

- (a) 3 hr
- (b) 2.5 hr
- (c) 2 hr
- (d) 4 hr
- (e) 5 hr

Q415. A, B and C together can do a piece of work in 40 days. After working together for 16 days, A leaves and then remaining work was completed by B and C in 40 days. Find in how many days A alone can do the work?

- (a) 100 days
- (b) 50 days
- (c) 80 days
- (d) 120 days
- (e) 75 days

Q416. A two digit number when increase by 75% then its digits gets interchanged. If difference between both digits is 3 then find the original number?

- (a) 63
- (b) 58
- (c) 47
- (d) 36
- (e) Cannot be determined

Q417. Average of Shehwag in 8 innings of first series is 47 runs/innings. In second series of some innings, his average was 3 runs more than the previous average and overall average for both series becomes 48. Find number of innings he played in second series.

- (a) 6
- (b) 4
- (c) 10
- (d) 12
- (e) None of these



Q418. A positive number is increased by 25%, decrease by 30% and divide by 2. If resultant is multiple by the original number then we get 2800. Find original number.

- (a) 40
- (b) 70
- (c) 60
- (d) 100
- (e) 80

Q419. To make a toy, 30% raw material cost, 20% worker cost, 30% marketing cost and 20% packing cost occur. If price of raw material is increased by 50% then to get some profit % (20%) price has to increase 450 Rs. Find the cost of packing (in Rs.) ?

- (a) 400
- (b) 500
- (c) 600
- (d) 300
- (e) 1000

Q420. Sum of a two digit number and reverse of it is 22 times the difference of the digits of the number. Find the two digit number.

- (a) 26
- (b) 13
- (c) 39
- (d) all of the above
- (e) None

Q421. In an election only two candidates participate. Candidate 'P' got 50% less votes than 'Q'. Had Q got 200 votes less there would have been a tie. What is the 8 times of the number of total votes polled.

- (a) 800
- (b) 7200
- (c) 3200
- (d) 9600
- (e) 3600

Q422. Average weight of n students in 35. A student whose weight is 25 is absent from the class then average weight of remaining student goes up by 1. Find the value of 'n'.

- (a) 10
- (b) 9
- (c) 8
- (d) 12
- (e) 11

Q423. Sumit has some money and want to buy a laptop worth of 35,000. Abhishek gives him $\frac{3}{2}$ times of money what Sumit have and Veer contributes 3 times of what Abhishek gives. If he just purchased the laptop then find Abhishek's contribution.

- (a) 7500
- (b) 10000
- (c) 8000
- (d) None of these
- (e) 9000

Q424. A number is increased by 350% and divided by half of itself then resultant becomes 45% of itself. What is the original number.

- (a) 9
- (b) 40
- (c) 25
- (d) 20
- (e) cannot be determined

Q425. If $x = |y| - 10$, then the minimum possible value of x is.

- (a) 0
- (b) -10
- (c) -5
- (d) 10
- (e) None of these

Q426. The smallest number of five consecutive odd number series is 3 more than second largest number of five consecutive even number series. Then find average of five consecutive even number series is how much less than that of average of odd number series?

- (a) 6
- (b) 7
- (c) 8
- (d) 9
- (e) 10

Q427. Arjun can shoot 12 arrows in a minute & Karan can shoot 16 arrows in a minute. If success rate [target killed in 100 arrows] is 60% for Arjun and $x\%$ for Karan. If in 5 minutes they both hunt 60 birds, then find value of x .

- (a) 60%
- (b) 40%
- (c) 30%
- (d) 36%
- (e) 24%

Q428. 20 boys go for dinner. 16 of them spent Rs. 64 each on their dinner and rest spent Rs 4 more than the average expenditure of all 20. What was the total money spent by them ?

- (a) 1200
- (b) 1500
- (c) 1800
- (d) 1300
- (e) None of these

Q429. Ritu have 7.8 Rs. in the denomination of 50 paise and 10 paise coin. If 10 paise coin is 50% more than that of 50 paise then find the value of 10 paise coin is what percent of the value of 50 paise coin.

- (a) 25%
- (b) 40%
- (c) 30%
- (d) 15%
- (e) None of these

Q430. Abhi and Shek have their salary in the ratio of 25 : 27 and expenditure in ratio 9 : 10 if their saving is equal then find the saving of Abhi is what % of his salary ?

- (a) 14%
- (b) 35%
- (c) None of these
- (d) 28%
- (e) 21%

Q431. Ravi invested 20% less than Sikha and Sikha invested 25% more than Mohit. The ratio of time period of investment of Ravi, Sikha and Mohit is 3: 4: 5 respectively and the sum of profit shares of Ravi and Mohit is Rs1600. Then find the profit share of Sikha.

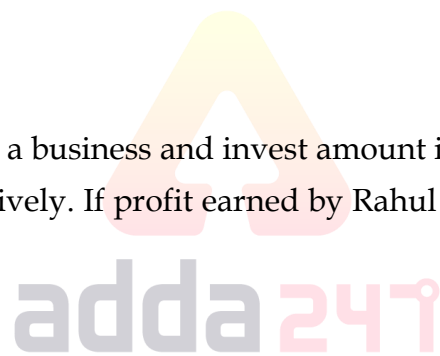
- (a) Rs. 1000
- (b) Rs. 1050
- (c) Rs. 1200
- (d) Rs. 1150
- (e) Rs. 950

Q432. Veer and Rahul entered into a business and invest amount in ratio 2 : 3 and ratio of time period for their investment is 4 : 3 respectively. If profit earned by Rahul is Rs. 150 more than Veer then find total profit ?

- (a) Rs. 1720
- (b) Rs. 2250
- (c) Rs. 2120
- (d) Rs. 2550
- (e) Rs. 2350

Q433. Deepak and Ayush invested Rs. 12600 together in a business. Deepak invested for 8 months and Ayush invested for 15 months, if Deepak and Ayush get profit in the ratio of 75 : 128, then find the amount invested by Ayush ?

- (a) 2400 Rs.
- (b) 3000 Rs.
- (c) 3600 Rs.
- (d) 4800 Rs.
- (e) 6400 Rs.



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Q434. Sri invested Rs 650 more than Rimi in scheme A for the same time period and Sri got $62\frac{1}{2}\%$ more profit than Rimi from that scheme. Then find the sum of amount invested by both in that scheme?

- (a) Rs. 2910
- (b) Rs. 2850
- (c) Rs. 2570
- (d) Rs. 3000
- (e) Rs. 2730

Q435. A invested $22\frac{1}{2}\%$ more than Z and B invested 20% less than Z. If the time period of investment is same for all and the difference of profit shares of A and B is Rs. 765. Then find the profit share of A is how much more than that of Z.

- (a) Rs. 405
- (b) Rs. 385
- (c) Rs. 418
- (d) Rs. 425
- (e) Rs. 400

Q436. Sumit's investment is 1.5 times of the investment of Sahil and ratio between period of their investments is 2 : 1. If share of Sumit in total profit is Rs.7550 more than the share of Sahil in total profit, then find the total profit.

- (a) Rs.7550
- (b) Rs.15100
- (c) Rs.14100
- (d) Rs.13500
- (e) Rs.15000

Q437. A, B and C started a business with Rs60,000. Amount invested by 'A and C' together is twice than that of 'B' while amount invested by 'A' and 'B' together is thrice then that of 'C'. 'A' invested for 6 months, 'B' for 9 months and 'C' for a year. Find the share of 'B' out of total profit of Rs 3400.(in Rs.)

- (a) 1200
- (b) 1800
- (c) 1000
- (d) 1400
- (e) 1500

Q438. A and B invest in the ratio of 3 : 5. After 6 months, C joins the business by investing some amount. At the end of the year, the profit share of B and C are equal. Find initial investment of A is what percent of the initial investment of C.

- (a) 24%
- (b) 36%
- (c) 60%
- (d) 45%
- (e) 30%

Q439. Veer and Bhavya started a business by investing Rs 45,000 and Rs 50,000 respectively. At the end of the year, they decided to divide 50% of the total profit share equally and rest in the investment ratio. If they had divided entire profit share in investment ratio, Bhavya got Rs 1500 more profit than that of actual, then find the total profit share?

- (a) Rs 1,04,000
- (b) Rs 1,08,000
- (c) Rs 1,12,000
- (d) Rs 1,14,000
- (e) Rs 1,15,000

Q440. Three friends Abhi, Archit & Nik enter into a business. Abhi contributes $\frac{1}{3}$ rd of total investment and Archit contributes as much as Abhi & Nik contributes together. Total profit at end of year is given as Rs 6600. Find share of profit of Nik?

- (a) Rs 550
- (b) Rs 1100
- (c) Rs 900
- (d) Rs 3300
- (e) Rs 2200

Q441. A part of Rs. 9600 is invested at a 5% annual return, while the remainder is invested at 3% annual return. If the annual income from both portion is the same, what is the total income from the two investments.

- (a) Rs. 380
- (b) Rs. 320
- (c) Rs. 440
- (d) Rs. 360
- (e) Rs. 520

Q442. Difference between CI and SI on a sum for 3 year at 20% p.a. is 176, Find the simple interest on the sum after 2 year at 10% p.a.?

- (a) 225
- (b) 250
- (c) 275
- (d) 300
- (e) 350

Q443. If on a sum the difference b/w simple interest and compound interest at rate of 12% p.a. for two years is Rs. 51.84. Then find the amount a man will get if he invested same sum for 2 years at 10% p.a. compounded annually?

- (a) Rs. 4598
- (b) Rs. 3993
- (c) Rs. 4114
- (d) Rs. 4235
- (e) Rs. 4356

Q444. Raj invested Rs. 15000 in scheme 'A' at rate of 18% p.a. simple interest for 3 years and Riya invested Rs. 18000 in scheme 'B' which offers 15% p.a. compound interest in 2 years. Find the difference between the interest earned from these two schemes?

- (a) Rs. 2295
- (b) Rs. 2400
- (c) Rs. 2500
- (d) Rs. 2345
- (e) Rs. 2100

Q445. A man invested an amount of Rs. 12000 in a scheme offering compound interest at rate of 10% for first year, $12\frac{1}{2}\%$ for second year and 20% for remaining time. Find the C.I. offered to him at the end of 2 year and 4 months?

- (a) Rs. 3840
- (b) Rs. 5420
- (c) Rs. 4500
- (d) Rs. 4400
- (e) Rs. 3600

Q446. A man invested $\frac{3^{th}}{4}$ of his saving at $16\frac{2}{3}\%$ p.a. simple interest, half of remaining savings at 8% p.a. C.I for 2 years and the remaining amount of savings of Rs. 1500 is kept uninvested. Find the amount of total money he had after 2 years in his savings?

- (a) Rs. 15000
- (b) Rs. 14500.25
- (c) Rs. 16245.6
- (d) Rs. 15249.6
- (e) Rs. 1486.65

Q447. An amount of $(P + 3000)$ is invested on C.I. at the rate $(R + 2)\%$ for two years. If total interest obtained on principal is $56\frac{1}{4}\%$ then find the value of R.

- (a) 25%
- (b) 23%
- (c) 28%
- (d) 30%
- (e) 18%

Q448. Abhishek lent Satish Rs.12000 on C.I. at the rate of 20% per annum and at the end of first year Satish borrowed Rs.x more from Abhishek on C.I. at the same rate. If at the end of second year, Satish

paid total amount of Rs.20400 to Abhishek then find how much extra amount Satish borrow at the end of first year?

- (a) Rs.2400
- (b) Rs.2000
- (c) Rs.3600
- (d) Rs.2600
- (e) Rs.4000

Q449. A man invests Rs. X in scheme 'A' and Rs. 1.5X in scheme 'B'. Scheme 'A' offers 20% p.a. at S.I and scheme 'B' offers 10% p.a. at C.I. If total interest earned by him after 2 years is Rs. 572, then find the interest earned from scheme 'B'?

- (a) Rs. 320
- (b) Rs. 252
- (c) Rs. 168
- (d) Rs. 420
- (e) Rs. 336

Q450. Ram invested his money (80,000) in two part one in S.I. and other in C.I. if interest he get after 2 year are in ratio 7 : 12 respectively then find the money invested by him in C.I. Given that both scheme give same rate of interest.

- (a) 30000
- (b) 40000
- (c) 36000
- (d) 50000
- (e) Cannot be determined.

Q451. A bag contains X red balls & 5 green balls. If two balls taken out probability of being red is $\frac{1}{6}$, then find value of X?

- (a) 4
- (b) 6
- (c) 8
- (d) 10
- (e) 12

Q452. A storekeeper has 3 types of shirts. 16 yellow, 12 green and 10 blue. If he sold 3 shirts, what is the probability that these are either all yellow or green?

- (a) $\frac{25}{126}$
- (b) $\frac{135}{703}$
- (c) $\frac{65}{1375}$
- (d) $\frac{23}{65}$
- (e) $\frac{65}{703}$

Q453. In a Rectangular path Amit start riding from A and after 1.5 hour he reached the another corner of rectangular path point C, diagonally opposite to point A. If the speed of Amit is 40 km/hr and the

difference between the length and breadth of rectangular path is 40 km then find the parameter of rectangular path is –

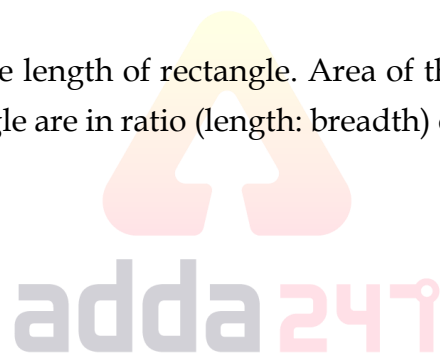
- (a) 150 km
- (b) 75 km
- (c) 175 km
- (d) 120 km
- (e) 150 km

Q454. The circumference of two circles is 176 cm and 220 cm respectively. There is a square whose side is 36 cm less than sum of the radius of both the circles. Then, find the area of that square (in cm^2)?

- (a) 841
- (b) 784
- (c) 676
- (d) 729
- (e) 525

Q455. Side of square is equal to the length of rectangle. Area of that square is 336 cm^2 more than the area of rectangle. If sides of rectangle are in ratio (length: breadth) of 7:4 then find perimeter of square?

- (a) 112 cm
- (b) 120 cm
- (c) 144 cm
- (d) 96 cm
- (e) 100 cm



Q456. The ratio between length of a rectangle and side of a square is 8 : 9. If breadth of rectangle is 10 cm and perimeter of square is 20 cm more than that of perimeter of rectangle, then find difference between area of square & that of rectangle?

- (a) 164 cm^2
- (b) 172 cm^2
- (c) 174 cm^2
- (d) 156 cm^2
- (e) 144 cm^2

Q457. A bag contains 'a' red balls, 5 green balls. One ball taken out at random, then probability of being red ball is $\frac{3}{8}$. If two balls taken out at random from bag, then find probability of being both balls either red or green?

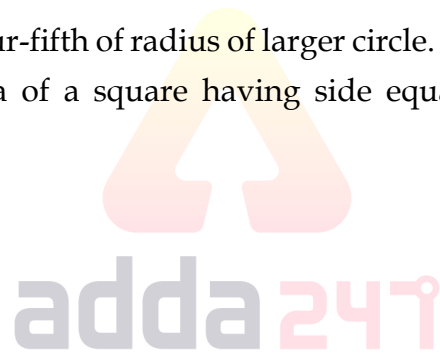
- (a) $\frac{15}{28}$
- (b) $\frac{13}{28}$
- (c) $\frac{9}{28}$
- (d) $\frac{11}{28}$
- (e) $\frac{9}{28}$

Q458. Ratio of area of rectangle to area of square is 1 : 4. Ratio of perimeter of rectangle to perimeter of square is 1 : 2. If length is 5 cm then find area of square ?

- (a) None of these
- (b) 64 cm²
- (c) 125 cm²
- (d) 25 cm²
- (e) 100 cm²

Q459. Radius of smaller circle is four-fifth of radius of larger circle. Difference of area of these two circle is 182 cm² less than twice of area of a square having side equal to radius of smaller circle. Find circumference of bigger circle ?

- (a) 352 cm
- (b) 176 cm
- (c) 220 cm
- (d) 264 cm
- (e) 308 cm



Q460. In a test who score above 40% is passed. Rahul gives the test then what is the probability that he failed.

- (a) $\frac{1}{6}$
- (b) $\frac{2}{5}$
- (c) $\frac{1}{4}$
- (d) $\frac{1}{2}$
- (e) $\frac{2}{3}$

Q461. Area of a given circle is 616 m². Perimeter of a rectangle is same as perimeter of circle. Find the diagonal of the rectangle if length of rectangle is 20% more than the breadth of the rectangle.

- (a) $2\sqrt{59}$

- (b) $2\sqrt{62}$
- (c) $4\sqrt{61}$
- (d) $4\sqrt{15}$
- (e) $2\sqrt{65}$

Q462. The difference of the areas of two squares drawn on 2 line segments of different lengths is 32 cm². Find the length of the greater line segment, if one is longer than the other by 2 cm.

- (a) 9 cm
- (b) 12 cm
- (c) 10 cm
- (d) 8 cm
- (e) 6 cm

Q463. A child is asked to pick up 2 balloons from a box containing 10 blue and 15 red balloons. What is the probability of the child picking, at random, 2 balloons of different colors ?

- (a) $\frac{1}{2}$
- (b) $\frac{2}{3}$
- (c) $\frac{1}{4}$
- (d) $\frac{3}{5}$
- (e) $\frac{5}{7}$

Q464. In how many ways can 5 prizes be distributed to 8 students if each student can get any number of prizes ?

- (a) 40
- (b) 5^8
- (c) 8^5
- (d) 120
- (e) 140

Q465. A cylinder having height 196 cm radius 14 cm is casted into 'x' number of cubes having side 7 cm. Find the value of 'x'.

- (a) 44
- (b) 352
- (c) 308
- (d) 392
- (e) 2816

Q466. What is the probability of forming word from the letters of word "IMPEACH" such that all vowels come together?

- (a) $\frac{8}{35}$

- (b) $\frac{1}{7}$
- (c) $\frac{3}{35}$
- (d) $\frac{17}{35}$
- (e) None of these

Q467. A sphere is melted and molded into solid cylinder. If radius of both solids is equal, then find the ratio of total surface area of sphere to the total surface area of cylinder

- (a) 2 : 3
- (b) 4 : 3
- (c) 3 : 7
- (d) 6 : 7
- (e) 7 : 6

Q468. There are four hotels in a town. If three men check into the hotels in a day then what is the probability that all of them do not check into the same hotel?

- (a) $\frac{15}{16}$
- (b) $\frac{63}{64}$
- (c) $\frac{3}{64}$
- (d) $\frac{1}{16}$
- (e) $\frac{1}{4}$

Q469. Two letters are chosen out of the alphabets of the English language. Find the probability that both the letters are vowels.

- (a) $\frac{2}{65}$
- (b) $\frac{3}{65}$
- (c) $\frac{1}{65}$
- (d) $\frac{3}{5}$
- (e) $\frac{7}{65}$

Q470. In how many different ways can the words be formed using letters of word CAREER such that no consonant occupy even position?

- (a) 36
- (b) 9
- (c) 5
- (d) 18
- (e) 12

Directions (471-475): In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly

Q471. Ravi sent 'X' messages in a day, 20% in which sent to Ram. Out of remaining 25% sent to Shyam. Remaining messages sent to Rahul and Gopal is in the ratio 4 : 5. Rahul got 24 message.

Quantity I: Value of '1.5X'

Quantity II: 'X + 35'

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Q472. Area of a square of side 16 cm is same as area of a rectangle whose breadth is 8 cm.

Quantity I: Perimeter of square.

Quantity II: Perimeter of rectangle.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Q473. Train 'A' can cross a pole in 20 seconds and a platform which is 60 m long in 25 seconds. Train 'A' can cross train 'B' coming from opposite direction in 15 seconds. Ratio between speed of train 'A' to train 'B' is 2 : 3.

Quantity I: Length of train 'B'

Quantity II: Length of train 'A'

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Q474. Probability of selecting one yellow ball out of a box consisting some yellow balls and some green balls is $\frac{4}{7}$.

Quantity I: No. of yellow balls in box.

Quantity II: No. of green balls in box.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Q475. Quantity I : Distance covered in upstream in 10.8 hours

Ratio of upstream speed to downstream speed is 1 : 11. If speed of boat in still water is 30 km/hr.

Quantity II : Find x.

The time taken by a boat for covering 'x - 18' km upstream is equal to time taken by it for covering 'x' km downstream. Upstream speed is 6 km/hr less than downstream speed and speed of boat in still water is 15 kmph.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Directions (476-480): In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly

Q476. Ram invested Rs80000 for a year and Shyam invested Rs72000 For 8 months.

Quantity I : If total profit at the end of year is Rs11400 then the share of Ram.

Quantity II : Rs. 1420

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q477. 24 men can do a work in 20 days and 36 women can do the same work in 24 days

Quantity I : Time taken by 12 man to complete whole work

Quantity II : Time taken by 16 women to complete whole work.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q478. Average age of A, B and C is 37 years and average age of A and B is 23 years

Quantity I : What is the age of C

Quantity II : 65 years

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q479. A train of length 360 m is travelling at a speed of 54 km/hr

Quantity I : Find the time take by train to cross a pole

Quantity II : If its speed is increased by $16\frac{2}{3}\%$ then find the time in which it can cross a platform of length 130 m

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q480. Quantity I : A sphere of diameter 13.4 cm is melted and cast into a right circular cone of height 26.8 cm. The radius of the base of the cone is ?

Quantity II: 5.95 cm.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Directions (481-483): The following questions are accompanied by two statements (I) and (II). You have to determine which statement(s) is/are sufficient/necessary to answer the questions.

- (a) Statement I alone is sufficient to answer the question but statement II alone is not sufficient to answer the questions.
- (b) Statement II alone is sufficient to answer the question but statement I alone is not sufficient to answer the question.
- (c) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
- (d) Either statement I or statement II by itself is sufficient to answer the question.
- (e) Statements I and II taken together are not sufficient to answer the question.

Q481. Find the age of Chauhan if minimum age difference between the age of any two persons (out of Abhi, Billi & Chauhan) is 2 years.

- (i) Ratio of age of Chauhan to Billi is 3 : 2.
- (ii) Ratio of age of Abhi 6 years ago to age of Billi 2 years hence is 1 : 2.

Q482. Calculate the rate of interest

- (i) An amount of Rs. 864 is obtained at the principal of Rs. 800 at SI.
- (ii) An amount of Rs. 176 is obtained after 19 years when Rs. 100 is submitted at SI.

Q483. What is the area of equilateral ΔABC .

- (i) The height of triangle is $3\sqrt{3}$ cm.
- (ii) Ratio of area of triangle ABC to area of similar triangle PQR is 9 : 4.

Directions (484-485): The following questions are accompanied by two statements A and B. You have to determine which statement(s) is/are sufficient/necessary to answer the questions.

- (a) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
- (b) Statement **B** alone is sufficient to answer the question, but statement **A** alone is not sufficient to answer the question.
- (c) Either statement **A** or statement **B** by itself is sufficient to answer the question.
- (d) Statement **A** alone is sufficient to answer the question, but statement **B** alone is not sufficient to answer the questions.
- (e) Statements **A** and **B** taken together are not sufficient to answer the question.

Q484. Find Veer's present age if Atul is ten year younger than Veer.

- (A) Five year hence, Atul's age is 20% more than Abhi's age while Abhi is 15 years younger than Veer.
- (B) Ratio between Veer's present age to Atul present age is 7 : 5

Q485. Find the speed of boat in downstream?

- (A) Speed of boat in still water is 50% more than speed of boat in upstream.
- (B) Difference between time taken by boat to cover 32 km in upstream to that of in downstream is 2 hours.

Directions (486-489): In the following questions two quantities are given in each question. Compare the numeric value of both the quantities and answers accordingly

Q486. Quantity I: Simple interest earned in three years at same rate. Difference between CI and SI for two years is 125 which is 25% of the amount invested.

Quantity II: Rs. 725

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q487. Speed of train A is 72 km/hr whose length is half of length of a platform & crosses the platform in 12 sec.

Quantity I: 30% of sum of length of train A and length of platform.

Quantity II: Length of train B which travel with 50% of speed of train A and crosses the train A in 10 sec when coming from opposite direction.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q488. Quantity I: Number of ways in which a four-digit number can be formed from digits 0, 1, 2, 4, 5, 6. If repetition allowed.

Quantity II: No. of ways in which the letters of word 'ABHISHEK' be arranged so that both 'H' never comes together.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Q489. Quantity I : Speed of faster trains(km/hr). Ratio of speed of two train is 5 : 7 and length of two trains is 120 m & 160 m respectively. Faster train crosses slower train in 28 sec if running in same direction.

Quantity II : Speed of Car(km/hr).. Distance between two cities A & B is 630 km. A car starts from city A towards city B with usual speed and after covering $\frac{1}{3}$ rd of distance, speed of car increased by 25% and its take 1 hours 20 minutes less than what its take at its usual speed.

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established

Directions (490-492): In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly.

Q490. Quantity I. $12x^2 - 61x + 77 = 0$

Quantity II. $20x^2 - 91x + 99 = 0$

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \leq Quantity I
- (e) Quantity I = Quantity II or relation can't be established.

Q491. Quantity I. The average of the five consecutive odd numbers is 23. Then, find the difference between the square of largest and smallest odd numbers.

Quantity II. Find the value of x (Use approximation)

$$495.01 + 63.98\% \text{ of } 949.963 = 738.0 + x$$

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \leq Quantity I
- (e) Quantity I = Quantity II or relation can't be established.

Q492. Quantity I. $10x^2 - 9x + 2 = 0$

Quantity II. $15x^2 - 11x + 2 = 0$

- (a) Quantity I > Quantity II
- (b) Quantity II > Quantity I
- (c) Quantity I \geq Quantity II
- (d) Quantity II \geq Quantity I
- (e) Quantity I = Quantity II or relation can't be established.

Direction (493 - 495): Given below in each question there are two statements (I) and (II). You must determine; which statement is enough to give the answer of question. Also, there are five alternatives given, you have to choose one alternative as your answer of the questions:

Q493. What is the time period for which Mr. Jindal invested his capital?

- I. Mr. Jindal and his partner Mr. Ravi invest in a partnership with total capital of Rs.20 lacs.
 - II. Ratio of time period of investment of Mr. Jindal and his partner Mr. Ravi is 4 : 5 and profit sharing ratio of Mr. Jindal and his partner Mr. Ravi is 12 : 25.
- (a) Only statement I is sufficient
 - (b) Only statement II is sufficient
 - (c) Statement I and II both together sufficient
 - (d) Either statement I or Statement II alone sufficient
 - (e) Neither statement I nor statement II sufficient

Q494. A bag contains 'a' blue ball, 'b' green balls and 6 red balls. Find difference between blue and green balls.

- I. If one ball is taken out randomly from bag, probability of being its blue is $\frac{4}{15}$.
 - II. If one ball is taken out randomly from bag, probability of being its green is $\frac{1}{3}$.
- (a) Only statement I is sufficient
 - (b) Only statement II is sufficient
 - (c) Statement I and II both together sufficient
 - (d) Either statement I or Statement II alone sufficient
 - (e) Neither statement I nor statement II sufficient

Q495. In how much time a boatman can reach a point and come back which is 120km away from his house?

- I. He can row 40km upstream in same time in which he can row 80km downstream
 - II. Time taken by boatman to row 60km upstream is 3.75 hours more than time taken by him to row same distance in downstream.
- (a) Only statement I is sufficient
 - (b) Only statement II is sufficient
 - (c) Statement I and II both together sufficient
 - (d) Either statement I or Statement II alone sufficient
 - (e) Neither statement I nor statement II sufficient

Direction (496-497): Given below in each question there are two statements (I) and (II). You have to determine, which statement is sufficient to give the answer of question. Also there are five alternatives given, you have choose one alternative as your answer of the questions:

Q496. Ratio of speed of two train is 4 : 5 and length of faster train & slower train is 120 m & 160 m respectively. Find difference between speeds of two trains (in km/hr)?

I. If both train running in opposite direction passed each other in $\frac{56}{9}$ sec.

II. Faster train crosses a man running in opposite direction at speed of 9 km/hr in $\frac{24}{5.5}$ sec.

- (a) Only statement I is sufficient
- (b) Only statement II is sufficient
- (c) Statement I and II both together are required
- (d) Either statement I or Statement II alone sufficient
- (e) Neither statement I or statement II sufficient

Q497. What profit shopkeeper made on article?

I. Shopkeeper sold article on 5% discount at Rs.7600.

II. If shopkeeper sold article on marked price, he would made a profit of 25%.

- (a) Only statement I is sufficient
- (b) Only statement II is sufficient
- (c) Statement I and II both are required
- (d) Either statement I or Statement II alone sufficient
- (e) Neither statement I or statement II sufficient

Directions (498-500): Each of the following questions is provided with 2 statements i.e. Statement I & Statement II. You have to read them and find which statement (s) is/are necessary to answer the question as per the instruction set given below.

- (a) Only Statement II is necessary
- (b) Only Statement I is necessary
- (c) Either Statement I or Statement II is sufficient to answer
- (d) Both Statement I & Statement II are necessary to answer
- (e) Neither Statement I nor Statement II is sufficient to answer

Q498. What is salary of each officer?

Statement I: Each clerk earns Rs 20000 which is 5% of salary of all officers.

Statement II: There are 40 employees (officer + clerk) in office and average income per employee is Rs 25000.

Q499. In how many days 5 men can finish the work?

Statement I: 4 women can complete same work in 4 days and a man is 1.5 times efficient than a woman.

Statement II: 4 men & 5 women take 2 days to complete the same work.

Q500. What is rate of interest?

Statement I: A sum becomes Rs 4000 in 2 years when invested at simple interest.

Statement II: Rs 4000 is invested at compound interest for 2 years and interest obtained is Rs 840.

Solutions

S1. Ans.(d)

$$\text{Sol. } 2^? = \frac{32 \times 384 \times 216}{3^4 \times 2^5} = 1024$$

$$2^? = 2^{10}$$

$$? = 10$$

S2. Ans.(b)

$$\text{Sol. } \sqrt{18 \times 8 + 37.5\% \times 216 - ?} = \sqrt{1444} - \sqrt{529}$$

$$\sqrt{144 + \frac{3}{8} \times 216 - ?} = 38 - 23$$

$$144 + 81 - ? = (15)^2 = 225$$

$$? = 225 - 225 = 0$$

S3. Ans.(c)

Sol.

$$\Rightarrow ? \times \frac{90}{100} = 126 + 396$$

$$\Rightarrow ? = \frac{522}{9} \times 10 = 580$$

S4. Ans.(e)

$$\text{Sol. } \frac{(14^2 - 8^2)}{?} \times (7^2 - 4^2) = ? \times 400$$

$$\Rightarrow ?^2 = \frac{(14-8)(14+8) \times 3 \times (7+4)}{400}$$

$$\Rightarrow ?^2 = \frac{6 \times 22 \times 11 \times 3}{400} = \left(\frac{33}{10}\right)^2$$

$$? = 3.3$$

S5. Ans.(d)

Sol.

$$\frac{92}{11} \times \frac{121}{23} \times \frac{8}{?} = 22 + 66$$

$$= \frac{352}{?} = 88$$

$$\Rightarrow ? = 4$$

S6. Ans.(d)

Sol.

$$64 \times (200 - 2) + \frac{20}{2} = ?$$

$$\text{or, } 12800 - 128 + 10 = ?$$

$$\text{or, } ? = 12682$$



S7. Ans.(b)

$$\text{Sol. } 62 \times \frac{100}{31 \times 200} + ? = 4$$

$$\text{or, } 1 + ? = 4$$

$$\text{or, } ? = 3$$

S8. Ans.(a)**Sol.**

$$1728 \times \frac{1}{12^3} - 11^3 = ?$$

$$\text{or, } 1728 \times \frac{1}{1728} - 1331 = ?$$

$$\text{or, } ? = -1330$$

S9. Ans.(c)**Sol.**

$$729 \times \frac{1}{81} - 24 \times \frac{100}{3 \times 10} = ?$$

$$\text{or, } 9 - 80 = ?$$

$$\text{or, } ? = -71$$

S10. Ans.(b)

$$\text{Sol. } 1120 (1001 - 999) + 55 = ?$$

$$\text{or, } 1120 \times 2 + 55 = ?$$

$$\text{or, } 2240 + 55 = ?$$

$$\text{or, } ? = 2295$$

S11. Ans.(a)**Sol.**

$$\frac{215}{9} + \frac{142}{9} - ? = \frac{74}{9}$$

$$? = \frac{283}{9} = 31\frac{4}{9}$$

S12. Ans.(d)**Sol.**

$$\frac{165}{10} \times 18 \times \frac{1}{27} \times 11 + 48 = (?)^2$$

$$(?)^2 = 11 \times 11 + 48$$

$$(?)^2 = 121 + 48$$

$$(?)^2 = 169$$

$$? = 13$$

S13. Ans.(b)

$$\text{Sol. } 101 + 1001 = ? + 841$$

$$? = 261$$



S14. Ans.(a)**Sol.**

$$9240 \times \frac{1}{?} = 440$$

$$? = \frac{9240}{440} = 21$$

S15. Ans.(e)**Sol.**

$$? \times 1211 \times 5 = 24220$$

$$? = \frac{24220}{1211 \times 5}$$

$$? = 4$$

S16. Ans.(c)**Sol.**

$$?^2 = \frac{512 \times 2916}{81 \times 72}$$

$$?^2 = 256$$

$$? = 16$$

S17. Ans.(b)**Sol.**

$$\frac{9}{2} + \frac{11}{3} + \frac{17}{6} = ? + \frac{12}{5} + \frac{21}{10}$$

$$4 + \frac{1}{2} + 3 + \frac{2}{3} + 2 + \frac{5}{6} = ? + 2 + \frac{2}{5} + 2 + \frac{1}{10}$$

$$9 + \frac{3+4+5}{6} = ? + 4 + \frac{4+1}{10}$$

$$9 + 2 = ? + 4 + \frac{1}{2}$$

$$11 - 4 - \frac{1}{2} = ?$$

$$\Rightarrow ? = 6\frac{1}{2}$$

**S18. Ans.(e)****Sol.**

$$5^{?-2} = \frac{5^5}{25^3} \times \frac{125^2}{625}$$

$$5^{?-2} = \frac{5^5}{(5^2)^3} \times \frac{(5^3)^2}{5^4} = \frac{5^5 \times 5^6}{5^6 \times 5^4}$$

$$5^{?-2} = 5^1$$

$$? - 2 = 1$$

$$? = 3$$

S19. Ans.(b)**Sol.**

$$? \times \frac{65}{72} = \frac{195 \times 352}{192}$$

$$? = \frac{195 \times 352 \times 72}{192 \times 65}$$

$$? = 396$$

S20. Ans.(c)**Sol.**

$$\sqrt[2]{256} \times (1728)^{\frac{1}{3}} = ? \times (4096)^{\frac{1}{4}}$$

$$16 \times (12^3)^{\frac{1}{3}} = ? \times (8^4)^{\frac{1}{4}}$$

$$? = \frac{16 \times 12}{8} = 24$$

S21. Ans.(d)**Sol.**

$$\Rightarrow 35\% \text{ of } 180 + 18^2 = (27)^{\frac{5}{3}} + ?^2$$

$$\Rightarrow 63 + 324 = 243 + ?^2$$

$$\Rightarrow 387 - 243 = ?^2$$

$$\Rightarrow ?^2 = 144$$

$$\Rightarrow ? = 12$$

S22. Ans.(a)**Sol.**

$$\frac{323}{357} \times 441 - 15 \times 21 = ?$$

$$\Rightarrow \frac{19 \times 17}{17 \times 21} \times 441 - 15 \times 21 = ?$$

$$\Rightarrow ? = 19 \times 21 - 15 \times 21 = 4 \times 21 = 84$$

S23. Ans.(c)**Sol.**

$$7\frac{4}{5} - 3\frac{2}{3} + 4\frac{8}{15} = \frac{234}{?}$$

$$8 + \frac{12-10+8}{15} = \frac{234}{?}$$

$$8 + \frac{2}{3} = \frac{234}{?}$$

$$\frac{26}{3} = \frac{234}{?}$$

$$\Rightarrow ? = 27$$

S24. Ans.(e)**Sol.**

$$?\frac{2}{3} = 64\% \text{ of } 150 + 7 \times 3 - 9^2$$

$$?\frac{2}{3} = 96 + 21 - 81$$

$$?\frac{2}{3} = 36$$

$$\Rightarrow ? = 36^{\frac{3}{2}} = 216$$

S25. Ans.(c)**Sol.**

$$? \times 4 - 40^2 = 14^2 - 36 \times 44$$

$$? \times 4 = 196 + 40^2 - (40 - 4) \times (40 + 4)$$

$$? \times 4 = 196 + 40^2 - 40^2 + 4^2 = 212$$

$$? = \frac{212}{4} = 53$$



S26. Ans.(d)**Sol.**

$$\frac{187}{357} \times (42)^2 - 22 \times 38 = \frac{?}{4}$$

$$\frac{11}{21} \times 42 \times 42 - 22 \times 38 = \frac{?}{4}$$

$$22 (42 - 38) \times 4 = ?$$

$$? = 352$$

S27. Ans.(b)**Sol.**

$$44 \times 46 - 160\% \text{ of } 950 = 21 \times ?$$

$$2024 - 1520 = 21 \times ?$$

$$? = \frac{504}{21} = 24$$

S28. Ans.(c)**Sol.**

$$? = 1126 - 986 = 140$$

S29. Ans.(a)**Sol.**

$$77\% \times 150 + 37.5\% \times 260 = ?\% \times 284$$

$$115.5 + 97.5 = ?\% \times 284$$

$$\frac{213}{284} \times 100 = ?$$

$$? = 75$$

S30. Ans.(b)**Sol.**

$$? = (7 + 9 - 4 + 5 - 6 - 3) + \left(\frac{1}{6} + \frac{2}{3} - \frac{1}{2} + \frac{5}{6} - \frac{1}{2} - \frac{1}{6}\right)$$

$$= 8 + \frac{1}{2} = 8\frac{1}{2}$$

S31. Ans.(d)**Sol.**

$$\frac{2^5 \times 2^7 \times 8^4}{4^3 \times 16^3} = 2^?$$

$$2^? = \frac{2^{12} \times 2^{12}}{2^6 \times 2^{12}} = 2^6$$

$$\Rightarrow ? = 6$$

S32. Ans.(b)**Sol.**

$$\sqrt{576} \times \sqrt{6561} = ? \times \sqrt{11664}$$

$$\Rightarrow ? \times 108 = 24 \times 81$$

$$\Rightarrow ? = \frac{24 \times 81}{108} = 18$$



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S33. Ans.(d)**Sol.**

$$\frac{306}{69} \times \frac{483}{34} \times \frac{25}{63} = ?^2$$

$$\Rightarrow ?^2 = 25$$

$$\Rightarrow ? = 5$$

S34. Ans.(a)**Sol.**

$$\frac{0.4 \times 220 \times 18}{48} = ? \times 11$$

$$\Rightarrow ? = 3$$

S35. Ans.(e)**Sol.**

$$22.5\% \text{ of } 120 + 47.5\% \text{ of } 360 = ? \times 11$$

$$\Rightarrow ? \times 11 = 27 + 171$$

$$\Rightarrow ? = \frac{198}{11} = 18$$

S36. Ans.(b)**Sol.**

$$\Rightarrow ? \times \frac{80}{11} = \frac{1}{3} \times 360 + \frac{2}{3} \times 120$$

$$\Rightarrow ? = \frac{11}{80} \times [120 + 80]$$

$$= 11 \times 2.5$$

$$= 27.5$$

**S37. Ans.(c)****Sol.**

$$\frac{180 \times 180 \times 8}{90 \times 64} = \frac{3}{10} \times ?$$

$$\Rightarrow ? = \frac{10}{3} \times 45 = 150$$

S38. Ans.(e)**Sol.**

$$\sqrt{?} + 36\% \text{ of } 350 = 62.5\% \text{ of } 224 + 40\% \text{ of } 55$$

$$\Rightarrow \sqrt{?} = \frac{5}{8} \times 224 + \frac{2}{5} \times 55 - \frac{9}{25} \times 350$$

$$\sqrt{?} = 140 + 22 - 126 = 36$$

$$\Rightarrow ? = 1296$$

S39. Ans.(a)**Sol.**

$$? = \frac{253}{483} \times 84 + \frac{126}{154} \times \frac{198}{18}$$

$$= 44 + 9 = 53$$

S40. Ans.(b)

Sol.

$$\begin{aligned} ? &= \sqrt[3]{24389} + \sqrt[2]{1849} + \sqrt[3]{10648} \\ &= 29 + 43 + 22 \\ &= 94 \end{aligned}$$

S41. Ans.(d)

Sol.

$$\begin{aligned} 1278 + 1822 - 288 + 2122 &= ? \\ ? &= 4934 \end{aligned}$$

S42. Ans.(a)

Sol.

$$\begin{aligned} \frac{3250}{25} + \frac{1208}{8} &=? \\ ? &= 130 + 151 = 281 \end{aligned}$$

S43. Ans.(c)

Sol.

$$\begin{aligned} (?)^2 &= 34 + 12 - 30 = 16 \\ ? &= 4 \end{aligned}$$

S44. Ans.(d)

Sol.

$$\begin{aligned} \sqrt{?} + 161 - \frac{546}{26} &= 25 \times 6 \\ \sqrt{?} + 161 - 21 &= 150 \\ \sqrt{?} &= 150 - 140 \\ ? &= (10)^2 = 100 \end{aligned}$$

S45. Ans.(e)

Sol.

$$\begin{aligned} (1 - 2 + 3 + 4) + \left(\frac{7}{8} - \frac{1}{4} + \frac{1}{2} + \frac{1}{4}\right) &=? \\ 6 + \frac{7+4}{8} &=? \\ ? &= 6 + \frac{11}{8} = 7\frac{3}{8} \end{aligned}$$

S46. Ans.(b)

Sol.

$$\begin{aligned} ? &= 8743 + 486 \div 18 \times 148 \\ &= 8743 + 27 \times 148 = 8743 + 3996 = 12739 \end{aligned}$$



S47. Ans.(e)

Sol.

$$[(135)^2 \div 15 \times 39] \div ? = 13 \times 15$$

$$\text{or, } \left[135 \times \frac{135}{15} \times 39 \right] \div ? = 13 \times 15$$

$$\therefore ? = 243$$

S48. Ans.(e)

Sol.

$$6348 + 8515 - 695 - ? = 4312 + 2162$$

$$\text{Or, } 14168 - ? = 6474$$

$$\text{Or, } ? = 14168 - 6474 = 7694$$

S49. Ans.(a)

Sol.

$$\frac{1272}{?} = 1382 - 1170$$

$$\text{Or, } \frac{1272}{?} = 212 \quad \therefore ? = \frac{1272}{212} = 6$$

S50. Ans.(a)

Sol.

$$10^? = 10^{37} \times 10^{-33}$$

$$= 10^{37-33} = 10^4$$

$$\therefore ? = 4$$

S51. Ans.(b)

Sol.

$$\frac{3432}{4} \times \frac{5}{3} + 168 = ?$$

$$\text{or, } 858 \times \frac{5}{3} + 168 = ?$$

$$\text{or, } 286 \times 5 + 168 = ?$$

$$\text{or, } 1430 + 168 = ?$$

$$\text{or, } ? = 1598$$

S52. Ans.(a)

Sol.

$$\frac{242}{6} \times \frac{4}{3} + ? = 31$$

$$\text{or, } \frac{242 \times 2}{9} + ? = 31$$

$$\text{or, } ? = 31 - \frac{484}{9}$$

$$\text{or, } ? = \frac{279 - 484}{9} = \frac{-205}{9}$$



S53. Ans.(c)

Sol.

$$\frac{2}{7} \times 343 + 2 = ?$$

$$\text{or, } 98 + 2 = ?$$

$$\text{or, } ? = 100$$

S54. Ans.(d)

Sol.

$$1089 \times (100 + 1) + (40 - 4) (40 + 4) = ?$$

$$\text{or, } 1089 + 108900 + 40^2 - 4^2 = ?$$

$$\text{or, } 109989 + 1600 - 16 = ?$$

$$\text{or, } 111573 = ?$$

S55. Ans.(a)

Sol.

$$6605.5 - 2395.5 = ?$$

$$\text{or, } ? = 4210$$

S56. Ans.(b)

Sol.

$$5\frac{1}{3} + 3\frac{4}{9} - 7\frac{1}{2} - 2\frac{1}{4} = ? - 16\frac{2}{9} + 11\frac{1}{4} - 5\frac{1}{2}$$

$$? = (5 + 3 - 7 - 2) + \frac{1}{3} + \frac{4}{9} - \frac{1}{2} - \frac{1}{4} + (16 - 11 + 5) + \frac{2}{9} - \frac{1}{4} + \frac{1}{2}$$

$$= 9 + \frac{1}{2} = 9\frac{1}{2}$$

S57. Ans.(e)

Sol.

$$\sqrt{1296} + (2744)^{\frac{1}{3}} = ? - \sqrt{961}$$

$$?^2 = 36 + 14 + 31 = 81$$

$$? = 9$$

S58. Ans.(d)

Sol.

$$63\% \text{ of } 450 + 81\% \text{ of } 150 = ? \% \text{ of } 675$$

$$283.5 + 121.5 = ?\% \times 675$$

$$\frac{405}{675} \times 100 = ?$$

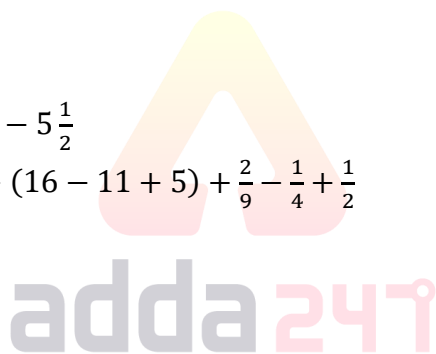
$$\Rightarrow ? = 60$$

S59. Ans.(c)

Sol.

$$205 \times ? \times 13 = 33625 + 25005$$

$$? = \frac{58630}{205 \times 13} = 22$$



S60. Ans.(a)**Sol.**

$$\frac{3}{8} \times \frac{4}{7} \times \frac{9}{11} \times 4312 = ? \times 7$$

$$\Rightarrow ? = 4312 \times \frac{1}{7} \times \frac{3}{2} \times \frac{1}{7} \times \frac{9}{11}$$

$$? = 108$$

S61. Ans.(b)**Sol.**

$$?^3 \times 18 + \frac{12}{100} \times 450 = (14)^2 + \sqrt[4]{16}$$

$$?^3 \times 18 + 54 = 196 + 2$$

$$?^3 \times 18 = 198 - 54$$

$$?^3 \times 18 = 144$$

$$?^3 = 8$$

$$? = 2$$

S62. Ans.(a)**Sol.**

$$\frac{?}{14} + (22)^2 = (24)^2 + \sqrt[3]{64}$$

$$\frac{?}{14} + 484 = 576 + 4$$

$$\frac{?}{14} = 580 - 484$$

$$? = 96 \times 14$$

$$? = 1344$$

S63. Ans.(d)**Sol.**

$$\frac{?}{100} \times 1355 + \frac{20}{100} \times 1210 = (28)^2$$

$$\frac{?}{100} \times 1355 + 242 = 784$$

$$\frac{?}{100} \times 1355 = 784 - 242$$

$$\frac{?}{100} \times 1355 = 542$$

$$? = \frac{542 \times 100}{1355}$$

$$? = 40$$

S64. Ans.(a)**Sol.**

$$? + \frac{35}{100} \times 1280 = (24)^2 + \sqrt{196}$$

$$? + 448 = 576 + 14$$

$$? = 590 - 448$$

$$? = 142$$



S65. Ans.(d)**Sol.**

$$\frac{56}{100} \times ? + \frac{125}{100} \times 96 = (14)^2 - \sqrt[4]{1296}$$

$$\frac{56}{100} \times ? + 120 = 196 - 6$$

$$\frac{56}{100} \times ? = 190 - 120$$

$$\frac{56}{100} \times ? = 70$$

$$? = \frac{70 \times 100}{56}$$

$$? = 125$$

S66. Ans.(b)

$$\text{Sol. } 23 \times 23 + 12 \times 8 \approx ?^2$$

$$? \approx 25$$

S67. Ans.(e)**Sol.**

$$87 + 914 - 338 \approx \frac{75}{100} \times (?)$$

$$\frac{663 \times 100}{75} = ?$$

$$? = 884$$

S68. Ans.(b)**Sol.**

$$? \% \text{ of } 1050 + \frac{75}{100} \times 420 = \frac{750 \times 70}{100}$$

$$? \% \text{ of } 1050 = 525 - 315$$

$$? = \frac{210}{1050} \times 100 \approx 20$$

**S69. Ans.(a)****Sol.**

$$\sqrt{324 \sqrt{20 \times 50 \times 8 \times 20}} + \frac{25 \times 32}{100} \approx ?$$

$$\sqrt{324 \times 20 \times 20} + 8 \approx ?$$

$$360 + 8 \approx ?$$

$$? = 368$$

S70. Ans.(e)**Sol.**

$$\frac{360 \times 288}{15 \times 18} = \frac{(?)^2}{6}$$

$$(?)^2 = 2304$$

$$(?) \approx 48$$

S71. Ans.(e)

Sol.

$$\frac{18}{3} \times \frac{1}{\sqrt{4}} = \sqrt{x}$$

$$\text{or, } 3 = \sqrt{x}$$

$$\text{or, } x = 9$$

S72. Ans.(c)

Sol.

$$\frac{20}{100} \times 160 \times \frac{4}{64} = x$$

$$\text{or, } x = 2$$

S73. Ans.(d)

Sol.

$$23 + 13 - \frac{10}{100} \times 200 = x$$

$$\text{or, } x = 36 - 20 = 16$$

S74. Ans.(c)

Sol.

$$\frac{68}{15} \times \frac{90}{17} = 20 + x$$

$$\text{or, } x = 4$$

S75. Ans.(a)

Sol.

$$\frac{1}{3} \times 900 \times \frac{200}{2} = x$$

$$\text{or, } 30000 = x$$

S76. Ans.(d)

Sol. $1884.89 \div 144.89 + (5.9)^2 \text{ of } \frac{1}{6.02} = ? \text{ of } 12.5\%$

$$1885 \times \frac{1}{145} + 6 = ? \times \frac{1}{8}$$

$$13 + 6 = ? \times \frac{1}{8}$$

$$? \approx 152$$

S77. Ans.(c)

Sol. $\frac{7}{8} \text{ of } 1700 - \frac{10}{7} \text{ of } 903 = ? - \frac{67.83}{3}$

$$\frac{7}{8} \times 1700 - \frac{10}{7} \times 903 = ? - \frac{67.83}{3}$$

$$1487.5 - 1290 + 23 \approx ?$$

$$? \approx 220$$



S78. Ans.(d)

Sol. $\sqrt{14500} \times 27.82 - (12.96)^3 = ?$

$$\sqrt{14500} \times 27.82 - (13)^3 = ?$$

$$120 \times 28 - 2197 = ?$$

$$3360 - 2197 = ?$$

$$? \approx 1163 \approx 1160$$

S79. Ans.(e)

Sol. $(8.927)^2 + (15.011)^3 + 1649.28 = ?$

$$81 + 3375 + 1649 = ?$$

$$\approx 5100$$

S80. Ans.(b)

Sol. $? = (729)^{1/3} \times 24.96 - \sqrt[3]{215.96} \times 30.05$

$$\approx 225 - 6 \times 30$$

$$\approx 225 - 180$$

$$\approx 45$$

S81. Ans.(d)

Sol.

$$(1331)^{\frac{1}{3}} \times 12 + \frac{62.5}{100} \times 400 - ? \approx (343)^{\frac{2}{6}} \times 49$$

$$\Rightarrow 11 \times 12 + \frac{5}{8} \times 400 - ? = (343)^{\frac{1}{3}} \times 49$$

$$\Rightarrow 132 + 250 - ? = 7 \times 49$$

$$\Rightarrow ? = 382 - 343$$

$$\Rightarrow ? = 39$$

S82. Ans.(b)

Sol.

$$60\% \text{ of } 1540 + \frac{37.5}{100} \times 96 + 1 \approx (?)^2$$

$$\Rightarrow 924 + \frac{3}{8} \times 96 + 1 = (?)^2$$

$$\Rightarrow (?)^2 = 924 + 36 + 1$$

$$\Rightarrow (?)^2 = 961$$

$$\Rightarrow ? = 31$$

S83. Ans.(c)

Sol.

$$67 + 3 + ? = 52 + 64$$

$$? = 46$$

S84. Ans.(e)**Sol.**

$$16\sqrt{?} + 69\sqrt{?} - 10\sqrt{?} \approx \frac{75}{34} \times (?)$$

$$75\sqrt{?} = \frac{75}{34} \times (?)$$

$$\Rightarrow \sqrt{?} = \frac{?}{34}$$

$$\Rightarrow \sqrt{?} = 34$$

$$\Rightarrow ? = (34)^2$$

$$\Rightarrow ? = 1156$$

S85. Ans.(a)**Sol.**

$$(25)^{\frac{9}{5}} + \frac{22}{100} \times 450 \approx ? + (3 \times 2)^3$$

$$(25)^{\frac{3}{2}} + 99 = ? + (6)^3$$

$$125 + 99 = ? + 216$$

$$? = 224 - 216$$

$$? = 8$$

S86. Ans.(a)**Sol.**

$$425 \times 8 - \frac{272+?}{8} \approx \frac{125}{100} \times 2400$$

$$\frac{272+?}{8} \approx 3400 - 3000$$

$$272+? \approx 3200$$

$$? \approx 2928$$

**S87. Ans.(d)****Sol.**

$$579 + 331 + \frac{30}{100} \times ? \approx \frac{40}{100} \times 2800$$

$$3 \times ? \approx (1120 - 910) \times 10$$

$$3 \times ? \approx 2100$$

$$? \approx 700$$

S88. Ans.(b)**Sol.**

$$\frac{727+?}{15} + 12 - 60 \approx \sqrt{1024}$$

$$\frac{727+?}{15} \approx 80$$

$$? \approx 1200 - 727$$

$$? \approx 473$$

S89. Ans.(e)

$$\text{Sol. } \sqrt{?} + (17)^2 - \frac{25}{100} \times 48 \approx 50 \times 6$$

$$\sqrt{?} + 289 - 12 \approx 300$$

$$\sqrt{?} \approx 300 - 277$$

$$\sqrt{?} \approx 23$$

$$? \approx 529$$

S90. Ans.(a)**Sol.**

$$\frac{[\sqrt[3]{729} + \sqrt{1296} + \sqrt[3]{3375}]}{?} \approx \sqrt{225}$$

$$\frac{[9+36+15]}{?} \approx 15$$

$$? \approx \frac{60}{15}$$

$$? \approx 4$$

S91. Ans.(c)**Sol.**

$$23.99 \times 26.003 + \frac{\sqrt{48.97 \times 13.05}}{90.98} = 4.97 \times ?^3$$

$$24 \times 26 + \frac{\sqrt{49 \times 13}}{91} = 5 \times ?^3$$

$$624 + 1 = 5 \times ?^3$$

$$? = 5$$

S92. Ans.(a)**Sol.**

$$109.07\sqrt{?} - \frac{61}{21.02} \times ? = 47.96\sqrt{?}$$

$$109\sqrt{?} - 48\sqrt{?} \approx \frac{61}{21} \times ?$$

$$61\sqrt{?} = \frac{61}{21} \times ?$$

$$? = 441$$

S93. Ans.(d)**Sol.**

$$1332.89 + 171.928 + 17.01 + ?^2 = 1690.67$$

$$1333 + 172 + 17 - 1691 \approx -?^2$$

$$?^2 = 169$$

$$? = 13$$

S94. Ans.(b)**Sol.**

$$150.09\% \text{ of } 20 + \frac{322.9}{17.02} + \sqrt{?} = (8.96)^2$$

$$30 + 19 + \sqrt{?} = 81$$

$$? = 1024$$



S95. Ans.(b)**Sol.**

$$56.08\% \text{ of } 149.92 + \sqrt{28.02 \times 6.98} - 11\frac{1}{9}\% \text{ of } 998.9 = ?$$

$$56\% \text{ of } 150 + \sqrt{28 \times 7} - \frac{1}{9} \times 999 \approx ?$$

$$84 + 14 - 111 = -13$$

S96. Ans.(b)**Sol.**

$$2^2 \times (3)^? \times (6)^2 = (12)^2 \times 9$$

$$2^2 \times (3)^? \times 36 = 144 \times 9$$

$$(3)^? = \frac{144 \times 9}{4 \times 36}$$

$$(3)^? = (3)^2$$

$$? = 2$$

S97. Ans.(d)**Sol.**

$$\frac{12.5}{100} \times 512 + \frac{37.5}{100} \times 96 + 3 \times 7 = (?)^2$$

$$\Rightarrow \frac{1}{8} \times 512 + \frac{3}{8} \times 96 + 21 = (?)^2$$

$$\Rightarrow 64 + 36 + 21 = (?)^2$$

$$\Rightarrow (?)^2 = 121$$

$$\Rightarrow ? = 11$$

S98. Ans.(c)**Sol.**

$$(64)^{4 \times \frac{1}{12}} \times 16 + 32 \times 8 = ? \times 8$$

$$(64)^{\frac{1}{3}} \times 16 + 256 = ? \times 8$$

$$4 \times 16 + 256 = ? \times 8$$

$$64 + 256 = ? \times 8$$

$$? = 320 \times \frac{1}{8}$$

$$? = 40$$

S99. Ans.(a)**Sol.**

$$(3375)^{\frac{1}{3}} \times \sqrt{21 + 15} \times 11 = (?)^2 + 29$$

$$15 \times \sqrt{36} \times 11 = (?)^2 + 29$$

$$(?)^2 = 15 \times 6 \times 11 - 29$$

$$(?)^2 = 990 - 29$$

$$(?)^2 = 961$$

$$(?) = 31$$



S100. Ans.(e)**Sol.**

$$\frac{(4)^2 \times (144)^{\frac{1}{2}} \times (?)^2}{16 \times 8} = \frac{(3)^3 \times 8}{(2)^2}$$

$$\Rightarrow \frac{16 \times 12 \times (?)^2}{16 \times 8} = 27 \times 2$$

$$\Rightarrow (?)^2 = \frac{27 \times 2 \times 8}{12}$$

$$\Rightarrow (?)^2 = 36$$

$$\Rightarrow ? = 6$$

S101. Ans.(b)**Sol.**

90	55	75	142.5	325	862.5
└───┬───┘		└───┬───┘		└───┬───┘	
×0.5+10		×1+20		×1.5+30	
		└───┬───┘		└───┬───┘	
		×2+40		×2.5+50	

S102. Ans.(d)**Sol.**

5	12	39	160	805	4836
└───┬───┘		└───┬───┘		└───┬───┘	
×2+2		×3+3		×4+4	
		└───┬───┘		└───┬───┘	
		×5+5		×6+6	

S103. Ans.(e)**Sol.**

1	3	7	31	151	911
└───┬───┘		└───┬───┘		└───┬───┘	
×2+1		×3-2		×4+3	
		└───┬───┘		└───┬───┘	
		×5-4		×6+5	

S104. Ans.(a)**Sol.**

32	16	64	8	128	4
└───┬───┘		└───┬───┘		└───┬───┘	
÷2		×4		÷8	
		└───┬───┘		└───┬───┘	
		×16		÷32	

S105. Ans.(c)**Sol.**

$$(1^3 + 1) = 2,$$

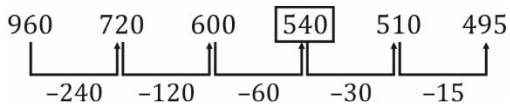
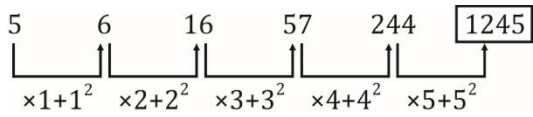
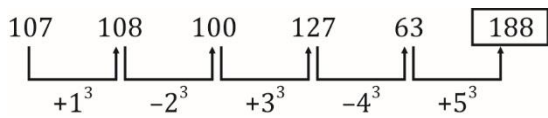
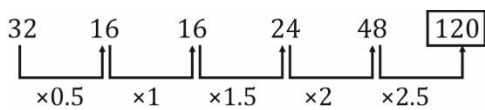
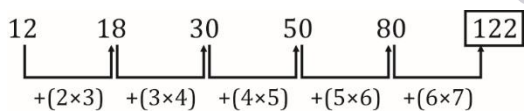
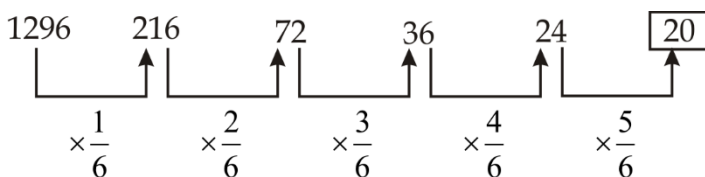
$$(3^3 + 3) = 30,$$

$$(5^3 + 5) = 130,$$

$$(7^3 + 7) = 350,$$

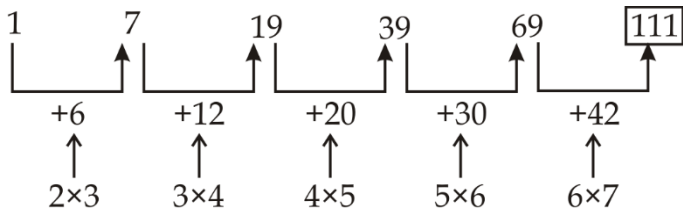
$$(9^3 + 9) = 738,$$

$$(11^3 + 11) = 1342$$

S106. Ans.(c)**Sol.****S107. Ans.(e)****Sol.****S108. Ans.(e)****Sol.****S109. Ans.(b)****Sol.****S110. Ans.(d)****Sol.****S111. Ans.(d)****Sol.****S112. Ans.(b)****Sol.**

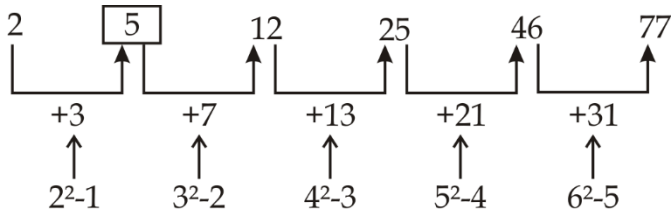
S113. Ans.(e)

Sol.



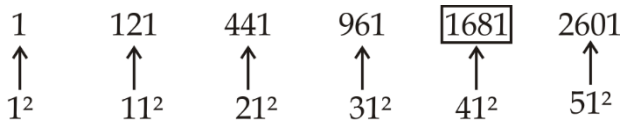
S114. Ans.(e)

Sol.



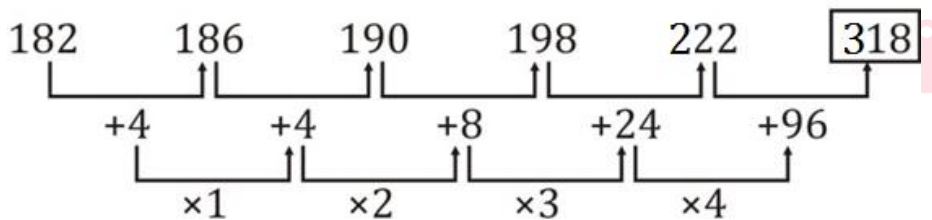
S115. Ans.(d)

Sol.



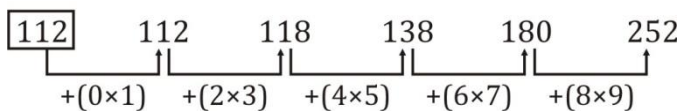
S116. Ans.(d)

Sol. Pattern is,



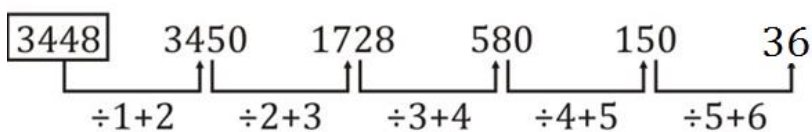
S17. Ans.(a)

Sol. Pattern is



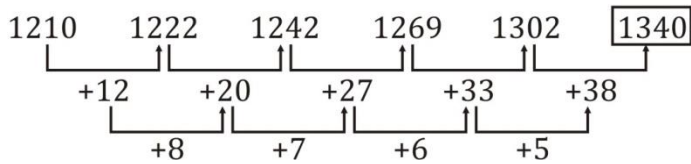
S118. Ans.(d)

Sol.



S119. Ans.(e)

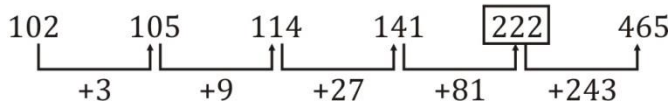
Sol. Pattern is



S120. Ans.(a)

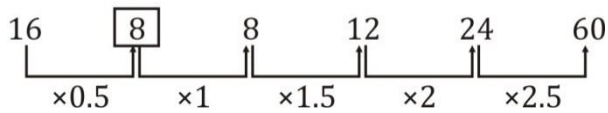
Sol.

Pattern is



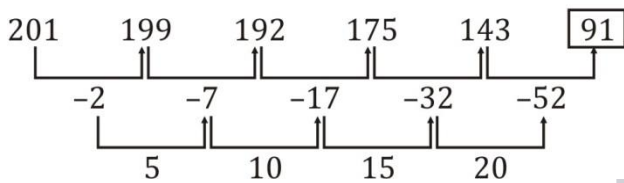
S121. Ans.(a)

Sol.



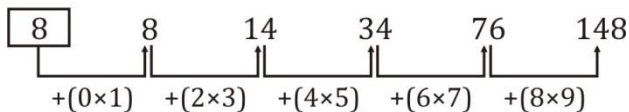
S122. Ans.(c)

Sol.



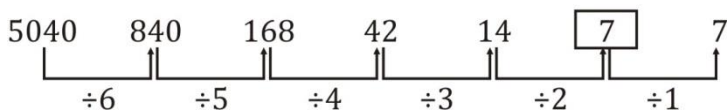
S123. Ans.(e)

Sol.



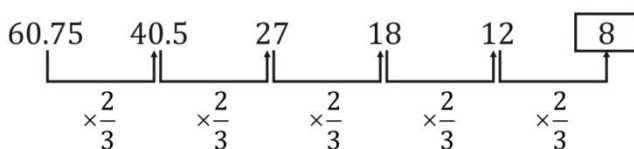
S124. Ans.(d)

Sol.



S125. Ans.(b)

Sol.



S132. Ans.(c)**Sol.**

$$28 \times \frac{1}{2} + 4 = 18$$

$$\boxed{18 \times 1 + 4 = 22}$$

$$22 \times \frac{3}{2} + 4 = 37$$

$$37 \times 2 + 4 = 78$$

$$78 \times \frac{5}{2} + 4 = 199$$

S133. Ans.(d)**Sol.**

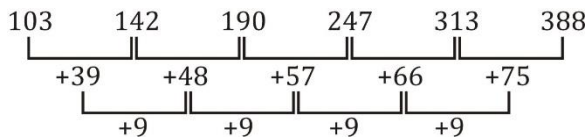
$$25 + 8^2 + 1 = 90$$

$$\boxed{90 + 7^2 + 1 = 140}$$

$$140 + 6^2 + 1 = 177$$

$$177 + 5^2 + 1 = 203$$

$$203 + 4^2 + 1 = 220$$

S134. Ans.(e)**Sol.****S135. Ans.(a)****Sol.**

Pattern is —

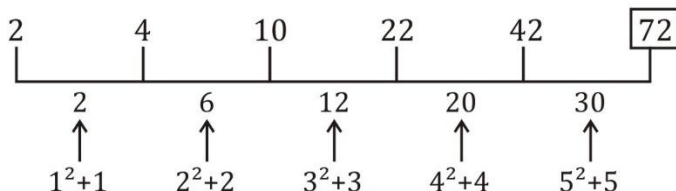
$$\boxed{21 \times 3 + 2 = 65}$$

$$65 \times 3 + 4 = 199$$

$$199 \times 3 + 6 = 603$$

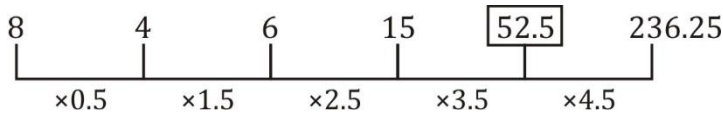
$$603 \times 3 + 8 = 1817$$

$$1817 \times 3 + 10 = 5461$$

S136. Ans.(c)**Sol.**

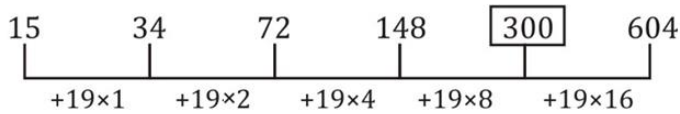
S137. Ans.(d)

Sol.



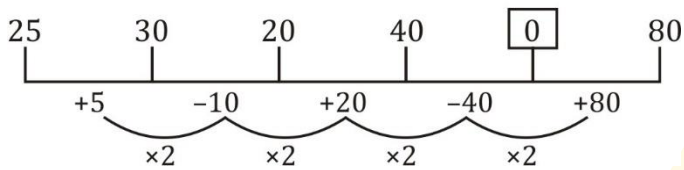
S138. Ans.(a)

Sol.



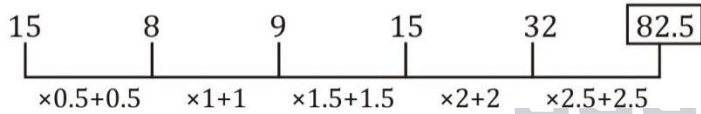
S139. Ans.(d)

Sol.



S140. Ans.(c)

Sol.



S141. Ans.(b)

Sol.

Pattern is

$$18 \times 3 + 1 = 55$$

$$55 \times 3 + 2 = 167$$

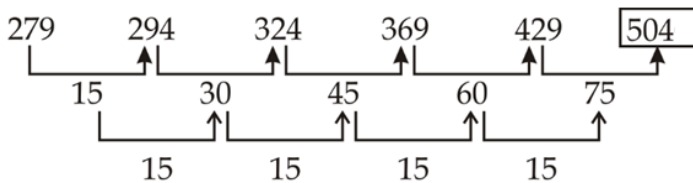
$$167 \times 3 + 3 = 504$$

$$504 \times 3 + 4 = 1516$$

S142. Ans.(a)

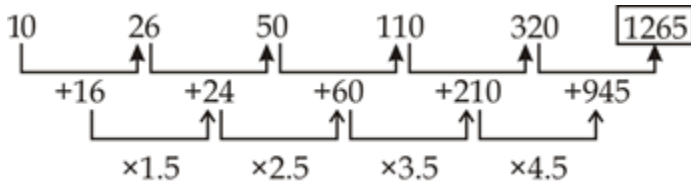
Sol.

Pattern is



S143. Ans.(d)

Sol. Pattern is



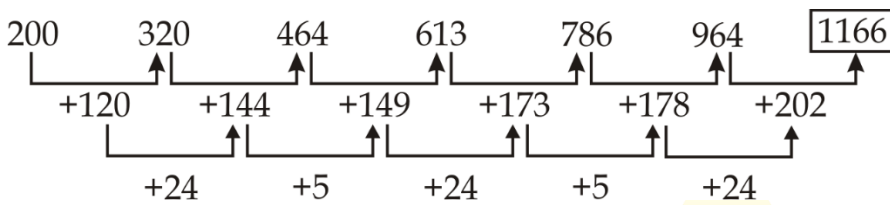
S144. Ans.(b)

Sol. Pattern is

$$\frac{286}{2} - 1 = 142, \frac{142}{2} - 1 = 70, \frac{70}{2} - 1 = 34, \frac{34}{2} - 1 = 16$$

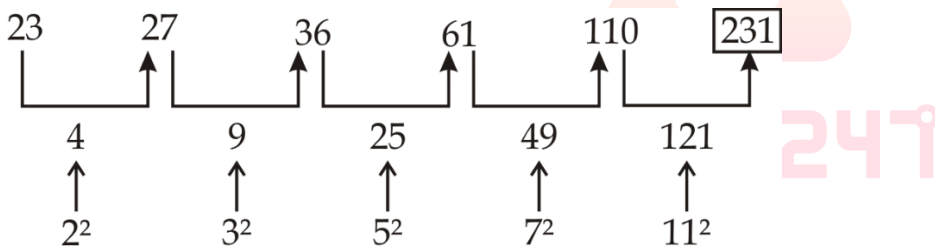
S145. Ans.(c)

Sol. Pattern is



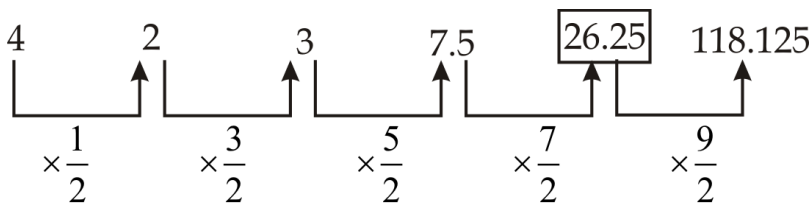
S146. Ans.(b)

Sol.



S147. Ans.(c)

Sol.



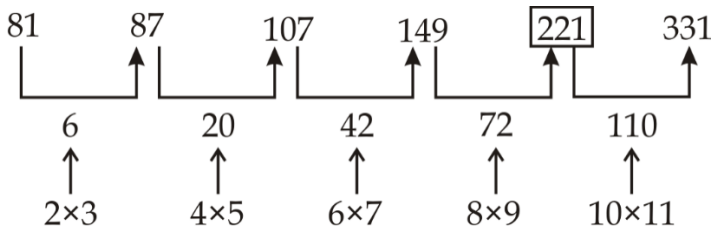
S148. Ans.(a)

Sol.



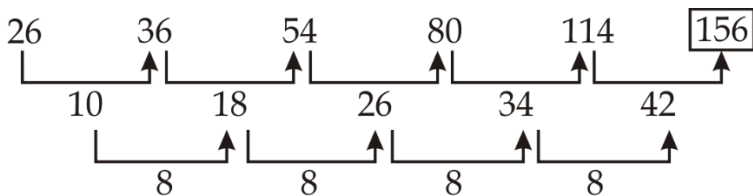
S149. Ans.(d)

Sol.



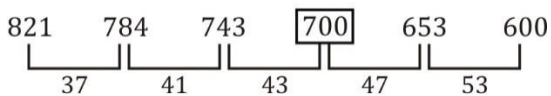
S150. Ans.(e)

Sol.



S151. Ans.(b)

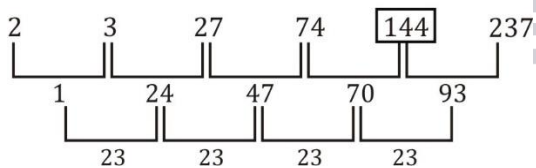
Sol.



37, 41, 43, 47, 53 are prime numbers.

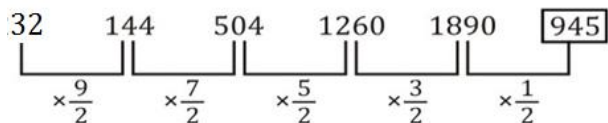
S152. Ans.(c)

Sol.



S153. Ans.(a)

Sol.



S154. Ans.(e)

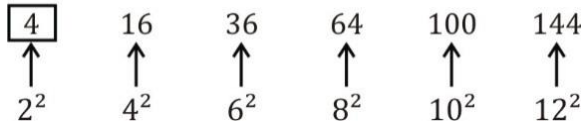
Sol.

3 4 7 11 18 29

$3 + 4 = 7$
 $4 + 7 = 11$
 $7 + 11 = 18$
 $11 + 18 = 29$

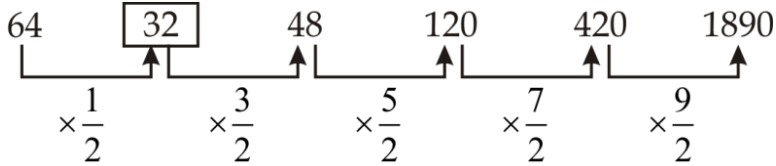
S155. Ans.(d)

Sol.



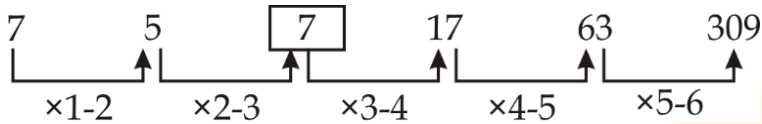
S156. Ans.(b)

Sol.



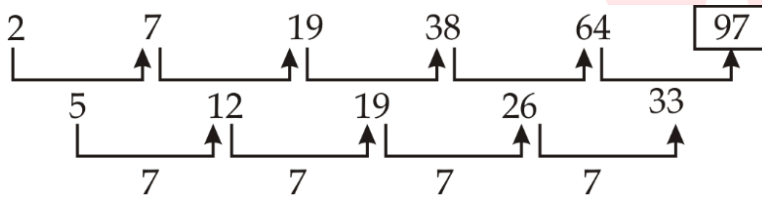
S157. Ans.(d)

Sol.



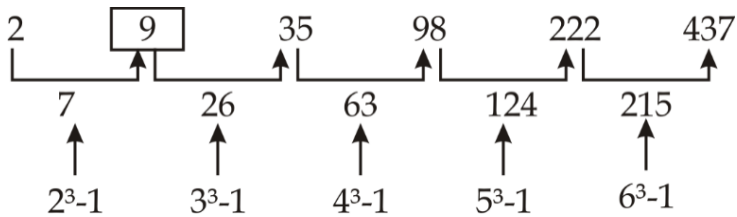
S13. Ans.(c)

Sol.



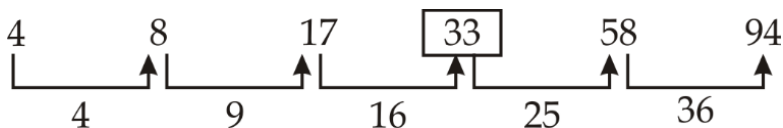
S159. Ans.(a)

Sol.



S160. Ans.(e)

Sol.



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S161. Ans.(e)**Sol.** Wrong number = 3320

Pattern of series –

$$6 \times 1 + 2^2 = 10$$

$$10 \times 2 + 4^2 = 36$$

$$36 \times 3 + 6^2 = 144$$

$$144 \times 4 + 8^2 = 640$$

$$640 \times 5 + 10^2 = 3300$$

$$3300 \times 6 + 12^2 = 19944$$

Should be 3300 in the place of 3320.

S162. Ans.(c)**Sol.** Wrong number = 207

Pattern of series –

$$5 \times 7 = 35$$

$$6 \times 9 = 54$$

$$7 \times 11 = 77$$

$$8 \times 13 = 104$$

$$9 \times 15 = 135$$

$$10 \times 17 = 170$$

$$11 \times 19 = 209$$

Should be 209 in the place of 207.

S163. Ans.(a)**Sol.** Wrong number = 9044

Pattern of series -

$$16 \times 2 - 4 = 28$$

$$28 \times 3 - 6 = 78$$

$$78 \times 4 - 8 = 304$$

$$304 \times 5 - 10 = 1510$$

$$1510 \times 6 - 12 = 9048$$

$$9048 \times 7 - 14 = 63322$$

Should be 9048 in the place of 9044.

S164. Ans.(b)**Sol.** Wrong number = 408

Pattern of series -

$$67 + 7^3 = 410$$

$$410 + 6^2 = 446$$

$$446 + 5^3 = 571$$

$$571 + 4^2 = 587$$

$$587 + 3^3 = 614$$

$$614 + 2^2 = 618$$

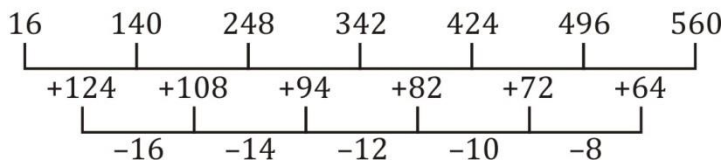
Should be 410 in the place of 408.



S165. Ans.(d)**Sol.**

Wrong number = 558

Pattern of series -



Should be 560 in the place of 558.

S166. Ans.(d)**Sol.**

Wrong number = 1070

Pattern of series -

$$156 + (12^2 - 1) = 299$$

$$299 + (14^2 - 1) = 494$$

$$494 + (16^2 - 1) = 749$$

$$749 + (18^2 - 1) = 1072$$

$$1072 + (20^2 - 1) = 1471$$

Should be 1072 in the place of 1070.

**S167. Ans.(b)****Sol.**

Wrong number = 1222

Pattern of series -

$$(27^2 - 1) = 728$$

$$(29^2 - 2) = 839$$

$$(31^2 - 3) = 958$$

$$(33^2 - 4) = 1085$$

$$(35^2 - 5) = 1220$$

$$(37^2 - 6) = 1363$$

Should be 1220 in the place of 1222.

S168. Ans.(c)**Sol.**

Wrong number = 12396

Pattern of series -

$$16 \times 6 + 6 = 102$$

$$102 \times 5 + 5 = 515$$

$$515 \times 4 + 4 = 2064$$

$$2064 \times 3 + 3 = 6195$$

$$6195 \times 2 + 2 = 12392$$

Should be 12392 in the place of 12396.

S169. Ans.(e)**Sol.**

Wrong number = 492.4

Pattern of series –

$$721 \div 7 = 103$$

$$103 \times 6 = 618$$

$$618 \div 5 = 123.6$$

$$123.6 \times 4 = 494.4$$

$$494.4 \div 3 = 164.8$$

Should be 494.4 in the place of 492.4

S170. Ans.(e)**Sol.**

Wrong number = 2888

Pattern of series –

$$4256 - 784 = 3472$$

$$3472 - 392 = 3080$$

$$3080 - 196 = 2884$$

$$2884 - 98 = 2786$$

$$2786 - 49 = 2737$$

Should be 2737 in the place of 2738

S171. Ans.(d)

Wrong number = 444

Pattern of series –

$$143 + (2^3 - 1) = 150$$

$$150 + (4^2 - 1) = 165$$

$$165 + (6^3 - 1) = 380$$

$$380 + (8^2 - 1) = 443$$

$$443 + (10^3 - 1) = 1442$$

Should be 443 in the place of 444.

S172. Ans.(b)**Sol.**

Wrong number = 282

Pattern of series –

$$4 + 14 \times 2 = 32$$

$$32 + 14 \times 4 = 88$$

$$88 + 14 \times 6 = 172$$

$$172 + 14 \times 8 = 284$$

$$284 + 14 \times 10 = 424$$

Should be 284 in the place of 282.



S173. Ans.(c)**Sol.**

Wrong number = 414

Pattern of series –

$12 \times 1 + 2 = 14$

$14 \times 2 + 4 = 32$

$32 \times 3 + 6 = 102$

$414 \times 4 + 8 = 416$

$416 \times 5 + 10 = 2090$

Should be 416 in the place of 414.

S174. Ans.(e)**Sol.**

Wrong number = 4

Pattern of series –

$42 \div 7 = 6$

$6 \times 6 = 36$

$36 \div 5 = 7.2$

$7.2 \times 4 = 28.8$

$28.8 \div 3 = 9.6$

Should be 6 in the place of 4.

**S175. Ans.(a)****Sol.**

Wrong number = 216

Pattern of series –

$12^2 = 144$

$11^3 = 1331$

$10^2 = 100$

$9^3 = 729$

$8^2 = 64$

$7^3 = 343$

Should be 343 in the place of 216

S176. Ans.(d)**Sol.**

$$\begin{array}{cccccc}
 256 & 384 & 576 & 864 & 1296 & 1944 & \boxed{2916} \\
 \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & \\
 \times \frac{3}{2} & \times \frac{3}{2} & \times \frac{3}{2} & \times \frac{3}{2} & \times \frac{3}{2} & \times \frac{3}{2} &
 \end{array}$$

S177. Ans.(a)

Sol.

$$\boxed{171} \quad 900 \quad 1143 \quad 1224 \quad 1251 \quad 1260 \quad 1263$$

729 243 81 27 9 3

S178. Ans.(e)

Sol.

$$20 \quad \boxed{30} \quad 60 \quad 150 \quad 450 \quad 1575 \quad 6300$$

$\times 1.5$ $\times 2$ $\times 2.5$ $\times 3$ $\times 3.5$ $\times 4$

S179. Ans.(b)

Sol.

$$824 \quad 568 \quad 440 \quad 376 \quad 344 \quad \boxed{328} \quad 320$$

256 128 64 32 16 8

S180. Ans.(c)

Sol.

$$93 \quad 177 \quad 268 \quad 373 \quad 499 \quad 653 \quad 842$$

84 91 105 126 154 189

7 14 21 28 35

S181. Ans.(b)

Sol.

$$419 \quad 420 \quad 425 \quad 450 \quad 575 \quad 1200 \quad \boxed{4325}$$

$+1$ $+5$ $+25$ $+125$ $+625$ $+3125$

$\times 5$ $\times 5$ $\times 5$ $\times 5$ $\times 5$

S182. Ans.(d)

Sol.

$$7 \quad 8 \quad \boxed{17} \quad 52 \quad 209 \quad 1046 \quad 6277$$

$\times 1+1$ $\times 2+1$ $\times 3+1$ $\times 4+1$ $\times 5+1$ $\times 6+1$

S183. Ans.(a)

Sol.

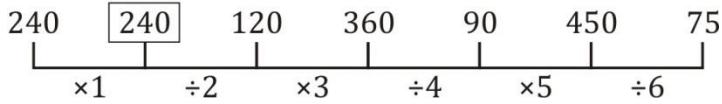
$$7 \quad 22 \quad 46 \quad 88 \quad 166 \quad 316 \quad \boxed{610}$$

15 24 42 78 150 294

$+9$ $+18$ $+36$ $+72$ $+144$

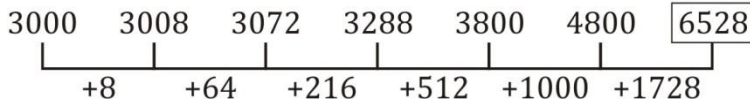
S184. Ans.(b)

Sol.



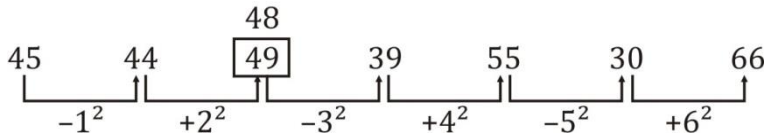
S185. Ans.(e)

Sol.



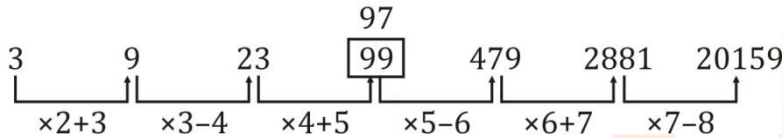
S186. Ans.(d)

Sol.



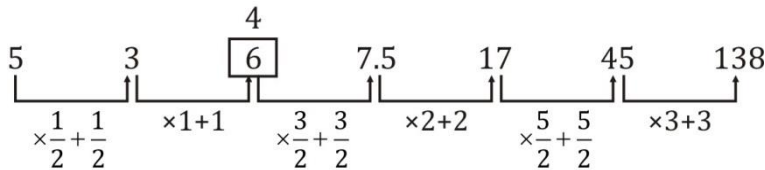
S187. Ans.(c)

Sol.



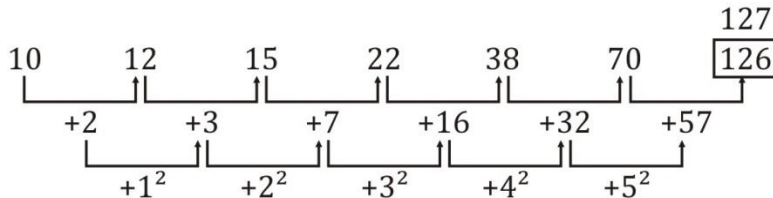
S188. Ans.(a)

Sol.



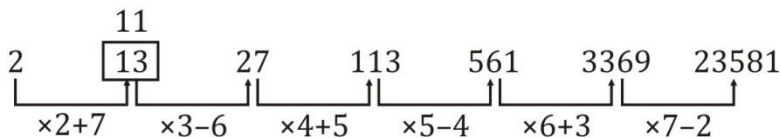
S189. Ans.(e)

Sol.



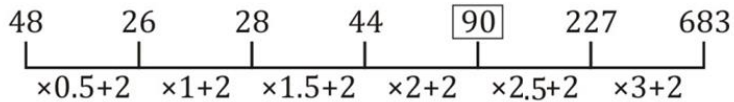
S190. Ans.(b)

Sol.



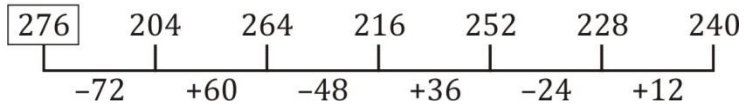
S191. Ans.(e)

Sol.



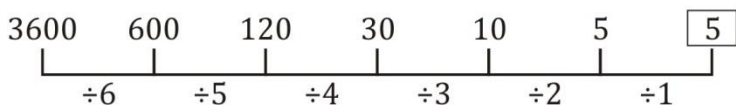
S192. Ans.(a)

Sol.



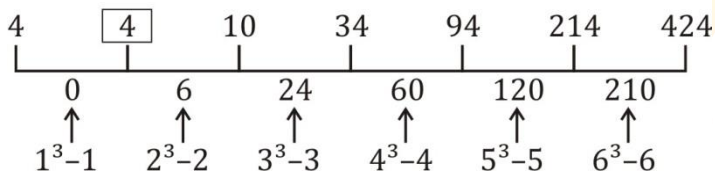
S193. Ans.(d)

Sol.



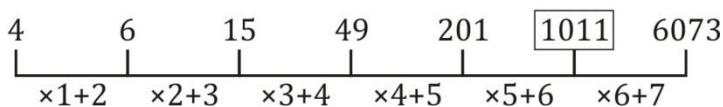
S194. Ans.(b)

Sol.



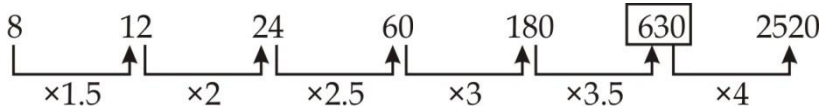
S195. Ans.(e)

Sol.



S196. Ans.(d)

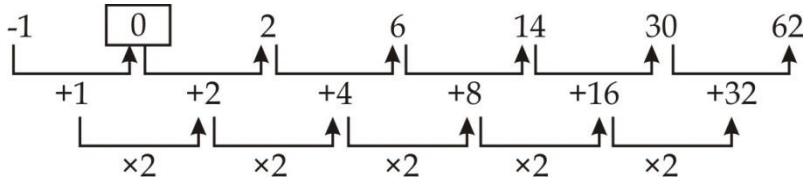
Sol.



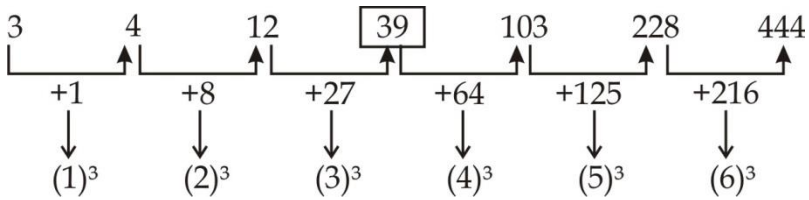
So, the wrong no. in this series is 640

S197. Ans.(a)

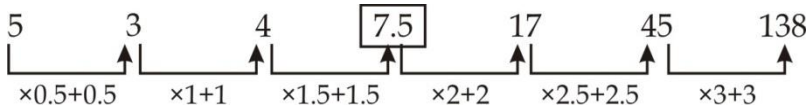
Sol.



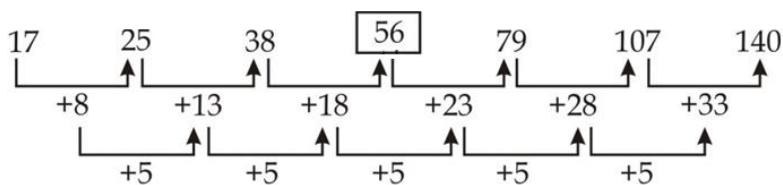
So, the wrong no. in this series is 1

S198. Ans.(c)**Sol.**

So, the wrong no. in this series is 41.

S199. Ans.(b)**Sol.**

So, the wrong no. in this series is 7.

S200. Ans.(d)**Sol.**

So, the wrong no. in this series is 53.

S201. Ans.(e)**Sol.**

I) $4x^2 - 16x + 15 = 0$

$4x^2 - 10x - 6x + 15 = 0$

$2x(2x - 5) - 3(2x - 5) = 0$

$x = \frac{3}{2} \text{ or } \frac{5}{2}$

II) $2y^2 - 13y + 18 = 0$

$2y^2 - 9y - 4y + 18 = 0$

$y(2y - 9) - 2(2y - 9) = 0$

$y = \frac{9}{2} \text{ or } 2$

∴ no relation between x and y

S202. Ans.(e)**Sol.**

I) $5x^2 + 17x + 6 = 0$

$5x^2 + 15x + 2x + 6 = 0$

$5x(x + 3) + 2(x + 3) = 0$

$x = -3 \text{ or } -\frac{2}{5}$

$$\text{II) } 7y^2 + 24y + 9 = 0$$

$$7y^2 + 21y + 3y + 9 = 0$$

$$7y(y + 3) + 3(y + 3) = 0$$

$$y = -3 \text{ or } \frac{-3}{7}$$

No relation between x and y

S203. Ans.(a)

Sol.

$$17x + 15y = 125 \dots(\text{i})$$

$$19x + 5y = 15 \dots(\text{ii})$$

Multiplying (ii) by 3 & subtracting (i) from (ii) & solving

$$x = -2$$

$$y = \frac{53}{5}$$

$$\therefore x < y$$

S204. Ans.(e)

Sol.

$$\text{I) } 15x^2 - 4x - 35 = 0$$

$$15x^2 + 21x - 25x - 35 = 0$$

$$3x(5x + 7) - 5(5x + 7) = 0$$

$$x = \frac{5}{3} \text{ or } \frac{-7}{5}$$

$$\text{II) } 9y^2 - 43y - 10 = 0$$

$$9y^2 - 45y + 2y - 10 = 0$$

$$9y(y - 5) + 2(y - 5) = 0$$

$$y = 5 \text{ or } \frac{-2}{9}$$

\therefore No relation can be established.

S205. Ans.(e)

Sol.

$$\text{I) } 13x^2 - 64x - 5 = 0$$

$$13x^2 - 65x + x - 5 = 0$$

$$13x(x - 5) + 1(x - 5) = 0$$

$$x = 5 \text{ or } \frac{-1}{13}$$

$$\text{II) } 11y^2 - 31y - 6 = 0$$

$$11y^2 - 33y + 2y - 6 = 0$$

$$11y(y - 3) + 2(y - 3) = 0$$

$$y = 3 \text{ or } -\frac{2}{11}$$

\therefore No relation can be established.



S206. Ans.(d)**Sol.**

I. $x^2 - 3x - 5x + 15 = 0$

$x(x - 3) - 5(x - 3) = 0$

$x = 5, 3$

II. $y^2 - 5y - 6y + 30 = 0$

$y(y - 5) - 6(y - 5) = 0$

$y = 5, 6$

$x \leq y$

S207. Ans.(e)**Sol.**

I. $x^2 + x + 4x + 4 = 0$

$x(x + 1) + 4(x + 1) = 0$

$x = -1, -4$

II. $y^2 + 9y - 2y - 18 = 0$

$y(y + 9) - 2(y + 9) = 0$

$y = 2, -9$

No relationship

S208. Ans.(e)**Sol.**

I. $x^2 = 9$

$x = \pm 3$

II. $y^2 + 12y - 3y - 36 = 0$

$y(y + 12) - 3(y + 12) = 0$

$y = 3, -12$

No relationship

S209. Ans.(a)**Sol.**

I.

$x = 2^{1.2} \times (2^3)^{1.6}$

$= 2^{1.2+4.8}$

$= 2^6$

$x = 64$

II. $(3^4)^{1.2}y = (3^3)^{2.6}$

$y = 3^{7.8-4.8}$

$= 3^3$

$y = 27$

$x > y$



S210. Ans.(c)**Sol.**

$$I. x = \frac{\sqrt[3]{4096}}{5}$$

$$x = \frac{16}{5}$$

$$x = 3.2$$

$$II. 6y = \sqrt{9} \times \sqrt[3]{729}$$

$$y = \frac{3 \times 9}{6}$$

$$y = 4.5$$

$$x < y$$

S211. Ans.(e)**Sol.**

$$(i) x^2 - 12x + 32 = 0$$

$$x^2 - 8x - 4x + 32 = 0$$

$$x(x - 8) - 4(x - 8) = 0$$

$$(x - 8)(x - 4) = 0$$

$$x = 8, 4$$

$$(ii) y^2 - 20y + 96 = 0$$

$$y^2 - 12y - 8y + 96 = 0$$

$$y(y - 12) - 8(y - 12) = 0$$

$$(y - 8)(y - 12) = 0$$

$$y = 8, 12$$

$$y \geq x$$

**S212. Ans.(b)****Sol.**

$$(i) 2x^2 - 3x - 20 = 0$$

$$2x^2 - 8x + 5x - 20 = 0$$

$$2x(x - 4) + 5(x - 4) = 0$$

$$(x - 4)(2x + 5) = 0$$

$$x = 4, -5/2$$

$$(ii) 2y^2 + 11y + 15 = 0$$

$$2y^2 + 6y + 5y + 15 = 0$$

$$2y(y + 3) + 5(y + 3) = 0$$

$$(2y + 5)(y + 3) = 0$$

$$y = \frac{-5}{2}, -3$$

$$x \geq y$$

S213. Ans.(c)**Sol.**

$$(i) x^2 - x - 6 = 0$$

$$x^2 - 3x + 2x - 6 = 0$$

$$x(x - 3) + 2(x - 3) = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3, -2$$

$$(ii) y^2 - 6y + 8 = 0$$

$$y^2 - 2y - 4y + 8 = 0$$

$$y(y - 2) - 4(y - 2) = 0$$

$$(y - 2)(y - 4) = 0$$

$$y = 2, 4$$

No relation can be established between x and y

S214. Ans.(c)**Sol.**

$$(i) x^2 + 14x - 32 = 0$$

$$x^2 + 16x - 2x - 32 = 0$$

$$x(x + 16) - 2(x + 16) = 0$$

$$(x - 2)(x + 16) = 0$$

$$x = -16, 2$$

$$(ii) y^2 - y - 12 = 0$$

$$y^2 - 4y + 3y - 12 = 0$$

$$y(y - 4) + 3(y - 4) = 0$$

$$(y + 3)(y - 4) = 0$$

$$y = -3, 4$$

No relation

**S215. Ans.(a)****Sol.**

$$(i) x^2 - 9x + 20 = 0$$

$$x^2 - 5x - 4x + 20 = 0$$

$$x(x - 5) - 4(x - 5) = 0$$

$$(x - 4)(x - 5) = 0$$

$$x = 4, 5$$

$$(ii) 2y^2 - 12y + 18 = 0$$

$$2y^2 - 6y - 6y + 18 = 0$$

$$2y(y - 3) - 6(y - 3) = 0$$

$$(2y - 6)(y - 3) = 0$$

$$y = 3, 3$$

$$x > y$$

S216. Ans.(e)**Sol.**

I. $3x^2 - 19x + 28 = 0$

$3x^2 - 12x - 7x + 28 = 0$

$3x(x - 4) - 7(x - 4) = 0$

$x = 4, \frac{7}{3}$

II. $4y^2 - 19y + 21 = 0$

$4y^2 - 12y - 7y + 21 = 0$

$4y(y - 3) - 7(y - 3) = 0$

$y = 3, \frac{7}{4}$

Relation cannot establish

S217. Ans.(a)**Sol.**

$3x + 4y = 2 \quad \dots(i)$

$6x + 2y = 2.5 \quad \dots(ii)$

Solving (i) & (ii)

$x = \frac{1}{3}, y = \frac{1}{4}$

$x > y$

S218. Ans.(e)**Sol.**

$8x + 7y = -60 \quad \dots(i)$

$7x - 5y = -8 \quad \dots(ii)$

On solving (i) & (ii)

We get $x = -4, y = -4$

$x = y$

S219. Ans.(d)**Sol.**

$12x^2 - 41x + 35 = 0$

$12x^2 - 20x - 21x + 35 = 0$

$4x(3x - 5) - 7(3x - 5) = 0$

$x = \frac{5}{3}, \frac{7}{4}$

II. $28y = 49$

$y = \frac{49}{28} = \frac{7}{4}$

$y \geq x$



S220. Ans.(c)**Sol.**

$$x^2 + 16x + 63 = 0$$

$$x^2 + 9x + 7x + 63 = 0$$

$$x = -7, -9$$

$$y^2 + 8y + 15 = 0$$

$$y^2 + 5y + 3y + 15 = 0$$

$$y = -3, -5$$

$$x < y$$

S221. Ans.(b)**Sol.**

$$(i) 6x^2 - 17x + 12 = 0$$

$$6x^2 - 8x - 9x + 12 = 0$$

$$x = \frac{3}{2}, \frac{4}{3}$$

$$(ii) 6y^2 - 23y + 21 = 0$$

$$6y^2 - 9y - 14y + 21 = 0$$

$$y = \frac{3}{2}, \frac{7}{3}$$

$$\therefore y \geq x$$

S222. Ans.(d)**Sol.**

$$(i) 21x^2 - 4x - 1 = 0$$

$$21x^2 - 7x + 3x - 1 = 0$$

$$x = \frac{-1}{7}, \frac{1}{3}$$

$$(ii) 30y^2 + 11y + 1 = 0$$

$$30y^2 + 6y + 5y + 1 = 0$$

$$y = \frac{-1}{6}, \frac{-1}{5}$$

$$\therefore x > y$$

S223. Ans.(c)**Sol.**

$$(i) 4x^2 + 57x + 189 = 0$$

$$4x^2 + 21x + 36x + 189 = 0$$

$$x = \frac{-21}{4}, -9$$

$$(ii) 2y^2 + 27y + 85 = 0$$

$$2y^2 + 17y + 10y + 85 = 0$$

$$y = \frac{-17}{2}, -5$$

$$\therefore \text{No relation}$$



S224. Ans.(d)**Sol.**

(i) $3x + 7y = 28$

(ii) $5x + 3y = 38$

Multiple (i) by 5 and multiple (ii) by 3 and subtract

So, $y = 1$

$x = 7$

$\therefore x > y$

S225. Ans.(c)**Sol.**

(i) $x^2 + 5x = 4 - 4x + 9x$

$x^2 = 4$

$x = \pm 2$

(ii) $y^2 + 7y - 8 = 0$

$y^2 + 8y - y - 8 = 0$

$y = -8, 1$

 \therefore No relation**S226. Ans.(a)****Sol.**

I. $x^2 - 4x - x + 4 = 0$

$(x - 1)(x - 4) = 0$

$x = 1, 4$

II. $y^2 + 2y + y + 2 = 0$

$y(y + 2) + 1(y + 2) = 0$

$(y + 1)(y + 2) = 0$

$\Rightarrow y = -1, -2$

$\Rightarrow x > y$

S227. Ans.(b)**Sol.**

I. $6x^2 - 2x - 3x + 1 = 0$

$2x(3x - 1) - 1(3x - 1) = 0$

$(2x - 1)(3x - 1) = 0$

$x = \frac{1}{2}, \frac{1}{3}$

II. $15y^2 - 3y - 5y + 1 = 0$

$3y(5y - 1) - 1(5y - 1) = 0$

$(3y - 1)(5y - 1) = 0$

$y = \frac{1}{3}, \frac{1}{5}$

$\Rightarrow x \geq y$



S228. Ans.(e)**Sol.**

I. $x^2 + 4x + x + 4 = 0$

$x(x + 4) + 1(x + 4) = 0$

$(x + 1)(x + 4) = 0$

$x = -1, -4$

II. $y^2 - 7y + 2y - 14 = 0$

$(y - 7)(y + 2) = 0$

$y = -2, 7$

 \Rightarrow No relation**S229. Ans.(c)****Sol.**

I. $x^2 + 4x + 5x + 20 = 0$

$(x + 4)(x + 5) = 0$

$x = -4, -5$

II. $y^2 + 3y + y + 3 = 0$

$(y + 1)(y + 3) = 0$

$y = -1, -3$

 $\Rightarrow x < y$ **S230. Ans.(b)****Sol.**

I. $x^2 - 4x - 2x + 8 = 0$

$(x - 4)(x - 2) = 0$

$x = 2, 4$

II. $y^2 + 4y - 2y - 8 = 0$

$(y + 4)(y - 2) = 0$

$y = -4, 2$

 $\Rightarrow x \geq y$ **S231. Ans.(e)****Sol.**

I. $25x^2 - 90x + 72 = 0$

$\Rightarrow 25x^2 - 30x - 60x + 72 = 0$

$\Rightarrow 5x(5x - 6) - 12(5x - 6) = 0$

$\Rightarrow x = \frac{6}{5} \text{ or } \frac{12}{5}$

II. $5y^2 - 27y + 36 = 0$

$\Rightarrow 5y^2 - 15y - 12y + 36 = 0$

$\Rightarrow 5y(y - 3) - 12(y - 3) = 0$

$\Rightarrow y = 3 \text{ or } \frac{12}{5}$

 $y \geq x$ 

S232. Ans.(c)**Sol.**

I. $12x^2 + 46x + 42 = 0$

$\Rightarrow 12x^2 + 18x + 28x + 42 = 0$

$\Rightarrow 6x(2x + 3) + 14(2x + 3) = 0$

$\Rightarrow x = \frac{-3}{2} \text{ or } \frac{-14}{6}$

II. $3y^2 - 16y + 21 = 0$

$\Rightarrow 3y^2 - 9y - 7y + 21 = 0$

$\Rightarrow 3y(y - 3) - 7(y - 3) = 0$

$\Rightarrow y = 3 \text{ or } \frac{7}{3}$

 $y > x$ **S233. Ans.(c)****Sol.**

I. $4x^2 + 10x - 14 = 0$

$\Rightarrow 4x^2 + 14x - 4x - 14 = 0$

$\Rightarrow 2x(2x + 7) - 2(2x + 7) = 0$

$\Rightarrow x = 1 \text{ or } \frac{-7}{2}$

II. $4y^2 - 16y + 15 = 0$

$\Rightarrow 4y^2 - 6y - 10y + 15 = 0$

$\Rightarrow 2y(2y - 3) - 5(2y - 3) = 0$

$\Rightarrow y = \frac{3}{2} \text{ or } \frac{5}{2}$

 $y > x$ **S234. Ans.(a)****Sol.**

I. $6x^2 + 15x - 36 = 0$

$\Rightarrow 6x^2 + 24x - 9x - 36 = 0$

$\Rightarrow 6x(x + 4) - 9(x + 4) = 0$

$\Rightarrow x = -4 \text{ or } \frac{9}{6}$

II. $4y^2 - 2y - 2 = 0$

$\Rightarrow 4y^2 - 4y + 2y - 2 = 0$

$\Rightarrow 4y(y - 1) + 2(y - 1) = 0$

$\Rightarrow y = 1 \text{ or } \frac{-1}{2}$

Relationship can't be established

S235. Ans.(d)**Sol.**

I. $2x^2 - 19x + 44 = 0$

$\Rightarrow 2x^2 - 8x - 11x + 44 = 0$

$\Rightarrow 2x(x - 4) - 11(x - 4) = 0$

$\Rightarrow x = 4 \text{ or } \frac{11}{2}$

II. $3y^2 - 22y + 40 = 0$

$\Rightarrow 3y^2 - 12y - 10y + 40 = 0$

$\Rightarrow 3y(y - 4) - 10(y - 4) = 0$

$\Rightarrow y = 4 \text{ or } \frac{10}{3}$

$x \geq y$

S236. Ans.(d)**Sol.**

(i) $x^2 + 9x = 25x - 63$

$x^2 - 16x + 63 = 0$

$x = 9, 7$

(ii) $4y^2 - 34y + 72 = 0$

$4y^2 - 18y - 16y + 72 = 0$

$y = \frac{9}{2}, 4$

$\therefore x > y$

S237. Ans.(c)**Sol.**

(i) $\frac{1}{5} \times \frac{225}{x} = -x + 14$

$-45 = x^2 - 14x$

$x^2 - 14x + 45 = 0$

$x^2 - 9x - 5x + 45$

$x = 9, 5$

(ii) $21y = y^2 + 90$

$y^2 - 21y + 90 = 0$

$y^2 - 15y - 6y + 90 = 0$

$y = 15, 6$

\therefore No relation

S238. Ans.(a)**Sol.**

(i) $6x + 7y = 15$

(ii) $3x + 14y = 19.5$

Solving (i) and (ii)

$x = \frac{7}{6}, y = \frac{8}{7}$

$x > y$



S239. Ans.(c)**Sol.**

$$(i) 7x^2 + 5x - 18 = 0$$

$$7x^2 - 9x + 14x - 18 = 0$$

$$x(7x - 9) + 2(7x - 9) = 0$$

$$x = \frac{9}{7}, -2$$

$$(ii) 3y^2 + 4y - 20 = 0$$

$$3y^2 + 10y - 6y - 20 = 0$$

$$y(3y + 10) - 2(3y + 10) = 0$$

$$y = 2, -\frac{10}{3}$$

∴ No relation

S240. Ans.(e)**Sol.**

$$(i) x^2 + 5x = 25x$$

$$x^2 - 20x = 0$$

$$x(x - 20) = 0$$

$$x = 0, 20$$

$$(ii) 3y^2 + 2y = 2y + 12$$

$$3y^2 = 12$$

$$y^2 = 4$$

$$y = \pm 2$$

∴ No relation.

**S241. Ans.(b)****Sol.**

$$I. 6x^2 + 17x + 5 = 0$$

$$6x^2 + 2x + 15x + 5 = 0$$

$$2x(3x + 1) + 5(3x + 1) = 0$$

$$\therefore x = -\frac{5}{2} \text{ or } -\frac{1}{3}$$

$$II. 2y^2 + 21y + 49 = 0$$

$$2y^2 + 14y + 7y + 49 = 0$$

$$2y(y + 7) + 7(y + 7) = 0$$

$$y = -7, -\frac{7}{2}$$

$$\Rightarrow x > y$$

S242. Ans.(a)**Sol.**

I. $x^2 - 8x + 15 = 0$

$x^2 - 5x - 3x + 15 = 0$

$x(x - 5) - 3(x - 5) = 0$

$\therefore x = 3 \text{ or } 5$

II. $2y^2 - 5y - 3 = 0$

$2y^2 - 6y + y - 3 = 0$

$2y(y - 3) + 1(y - 3) = 0$

$y = 3 \text{ or } -\frac{1}{2}$

$\therefore x \geq y$

S243. Ans.(e)**Sol.**

I. $5x^2 + 11x + 2 = 0$

$5x^2 + 10x + x + 2 = 0$

$5x(x + 2) + 1(x + 2) = 0$

$x = -2 \text{ or } -\frac{1}{5}$

II. $4y^2 + 13y + 3 = 0$

$4y^2 + 12y + y + 3 = 0$

$4y(y + 3) + 1(y + 3) = 0$

$\therefore y = -3 \text{ or } -\frac{1}{4}$

$\therefore \text{no relation}$

S244. Ans.(b)**Sol.**

I. $4x + 2y = 4 \dots(i)$

II. $3x + 5y = 3 \dots(ii)$

Multiplying (i) by 5 & (ii) by 2 and on solving

$x = 1, y = 0$

$\therefore x > y$

S245. Ans.(d)**Sol.**

I. $6x^2 + x - 15 = 0$

$6x^2 - 9x + 10x - 15 = 0$

$3x(2x - 3) + 5(2x - 3) = 0$

$\therefore x = \frac{3}{2} \text{ or } -\frac{5}{3}$

II. $4y^2 - 24y + 35 = 0$

$4y^2 - 14y - 10y + 35 = 0$

$2y(2y - 7) - 5(2y - 7) = 0$

$\therefore y = \frac{7}{2} \text{ or } \frac{5}{2}$

$\therefore y > x$



S246. Ans.(e)**Sol.**

$$(i) x^2 - 12x + 32 = 0$$

$$x^2 - 8x - 4x + 32 = 0$$

$$x(x - 8) - 4(x - 8) = 0$$

$$(x - 8)(x - 4) = 0$$

$$x = 8, 4$$

$$(ii) y^2 - 20y + 96 = 0$$

$$y^2 - 12y - 8y + 96 = 0$$

$$y(y - 12) - 8(y - 12) = 0$$

$$(y - 8)(y - 12) = 0$$

$$y = 8, 12$$

$$y \geq x$$

S247. Ans.(b)**Sol.**

$$(i) 2x^2 - 3x - 20 = 0$$

$$2x^2 - 8x + 5x - 20 = 0$$

$$2x(x - 4) + 5(x - 4) = 0$$

$$(x - 4)(2x + 5) = 0$$

$$x = 4, -5/2$$

$$(ii) 2y^2 + 11y + 15 = 0$$

$$2y^2 + 6y + 5y + 15 = 0$$

$$2y(y + 3) + 5(y + 3) = 0$$

$$(2y + 5)(y + 3) = 0$$

$$y = \frac{-5}{2}, -3$$

$$x \geq y$$

**S248. Ans.(c)****Sol.**

$$(i) x^2 - x - 6 = 0$$

$$x^2 - 3x + 2x - 6 = 0$$

$$x(x - 3) + 2(x - 3) = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3, -2$$

$$(ii) y^2 - 6y + 8 = 0$$

$$y^2 - 2y - 4y + 8 = 0$$

$$y(y - 2) - 4(y - 2) = 0$$

$$(y - 2)(y - 4) = 0$$

$$y = 2, 4$$

No relation can be established between x and y

S249. Ans.(c)**Sol.**

$$(i) x^2 + 14x - 32 = 0$$

$$x^2 + 16x - 2x - 32 = 0$$

$$x(x+16) - 2(x+16) = 0$$

$$(x-2)(x+16) = 0$$

$$x = -16, 2$$

$$(ii) y^2 - y - 12 = 0$$

$$y^2 - 4y + 3y - 12 = 0$$

$$y(y-4) + 3(y-4) = 0$$

$$(y+3)(y-4) = 0$$

$$y = -3, 4$$

No relation

S250. Ans.(a)**Sol.**

$$(i) x^2 - 9x + 20 = 0$$

$$x^2 - 5x - 4x + 20 = 0$$

$$x(x-5) - 4(x-5) = 0$$

$$(x-4)(x-5) = 0$$

$$x = 4, 5$$

$$(ii) 2y^2 - 12y + 18 = 0$$

$$2y^2 - 6y - 6y + 18 = 0$$

$$2y(y-3) - 6(y-3) = 0$$

$$(2y-6)(y-3) = 0$$

$$y = 3, 3$$

$$x > y$$

**S251. Ans.(b)**

Sol. Students scoring less than 60% from school B = $725 - 725 \times \frac{24}{100} = 551$

Students scoring less than 60% from school C = $440 - 440 \times \frac{55}{100} = 198$

Students scoring less than 60% from School D = $625 - 625 \times \frac{48}{100} = 325$

So average no. of students scoring less than 60% for school B, C & D together = $\frac{551+198+325}{3} = 358$

S252. Ans.(d)

Sol. Boys in school D = $625 \times \frac{11}{25} = 275$

Girls in school D = $625 - 275 = 350$

Boy in school E = $450 \times \frac{5}{9} = 250$

Girls in school E = $450 - 250 = 200$

Required Ratio = $\frac{275+250}{350+200} = \frac{525}{550} = 21 : 22$

S253. Ans.(a)

Sol. students from school D scoring 60% or more = $625 \times \frac{48}{100} = 300$

Students scoring 60% or more from school A and E together = $60 \times \frac{30}{100} + 450 \times \frac{40}{100}$

= $180 + 180$

= 360

Required percent = $\frac{360-300}{360} \times 100$

= $\frac{1}{6} \times 100$

= $16\frac{2}{3}\%$

S254. Ans.(b)

Sol. Total students in school C = 440

Pass students in school C = $\frac{7}{10} \times 440 = 308$

failed students in school C = $440 - 308 = 132$

Students scoring 60% or more marks in school C = $440 \times \frac{55}{100} = 242$

Pass students with score less than 60% = $308 - 242 = 66$

S255. Ans.(e)

Sol. Required ratio = $\frac{600 \times \frac{70}{100} + 725 \times \frac{76}{100}}{440 \times \frac{55}{100} + 450 \times \frac{40}{100}} = \frac{420+551}{242+180}$

= $\frac{971}{422} = 971 : 422$

Solutions (256-260)

Total money \Rightarrow Rs 12000

Amount invested in S.I. = $\frac{12000}{100} \times 40 =$ Rs 4800

Amount invested in C.I. = Rs 7200

Total interest earned = $\frac{4800 \times 2 \times 10}{100} + 7200 \left[\left(1 + \frac{10}{100}\right)^2 - 1 \right] =$ Rs 2472

Price of watch = Rs 2472

Price of cycle = Rs 7200

Selling price of cycle = $7200 + 1500 =$ Rs 8700

Price of phone = Rs 4800

Value of phone after being damage = $4800 \times \frac{3}{4} =$ Rs 3600

S256. Ans.(c)

Sol. Value of watch after two years = $2472 \times \frac{5}{6} \times \frac{5}{6} = 1716.67$

S257. Ans.(b)

Sol. Profit% = $\frac{1800}{7200} \times 100 = 25\%$



S258. Ans.(d)

Sol. Profit $\Rightarrow 8700 + 3600 - (7200 + 4800) = \text{Rs } 300$

$$\text{Profit \%} = \frac{300}{12000} \times 100 = 2.5\%$$

S259. Ans.(e)

Sol. Required amount $= \frac{2}{3} \times 8700 = \text{Rs } 5800$

S260. Ans.(a)

Sol. New interest $= \frac{12000 \times 21}{100} = \text{Rs. } 2520$

Interest increase $= 2520 - 2472 = 48 \text{ Rs.}$

S261. Ans.(b)

Sol. Girls from J.N.V in IX class who attended seminar $= 30$

Total girls in IX class who attended seminar $= \frac{30}{3} \times (2 + 3 + 1) = 60$

Total student in IX class who attended seminar $= \frac{60}{60} \times 100 = 100$

Total number of students who attended seminar $= \frac{100}{60} \times 360 = 600$

S262. Ans.(e)

Sol. Let Girls in class X and Boy in class XII be $4x$ and $5x$ respectively.

Now \rightarrow

Strength of class XII makes central angle $\rightarrow 64.5^\circ$

Girls in class XII make angle $\rightarrow 64.5^\circ \times \frac{2}{3} = 43^\circ$

Boys in class XII make central angle $\rightarrow 64.5^\circ - 43^\circ = 21.5^\circ$

$5x \rightarrow 21.5^\circ$

$x \rightarrow 4.3^\circ$

Girls in class X make angle $\rightarrow 4.30^\circ \times 4 = 17.2^\circ$

Boys in class X make angle $\rightarrow 48^\circ - 17.2^\circ = 30.8^\circ$

Required% $\rightarrow \frac{30.8}{48} \times 100 = 64\frac{1}{6}\%$

S263. Ans.(c)

Sol. Required Ratio $\rightarrow \frac{\text{student in (VII+X+XI)}}{\text{student in (VIII+IX+XII)}} = \frac{\text{central Angle of (VII+X+XI)}}{\text{central Angle of (VIII+IX+XII)}}$

$$= \frac{75^\circ + 48^\circ + 67.5^\circ}{64.5^\circ + 60^\circ + 45^\circ} = \frac{127}{113}$$

S264. Ans.(a)

Sol. Student from J.N.V in class XI who attended seminar $= 75$

Total students in class XI who attended seminar $= \frac{75}{25} \times 100 = 300$

Student in class VIII who attended seminar $= \frac{300}{67.5} \times 45 = 200$

Student from J.N.V and D.P.S in VIII class who attended seminar $= 200 - 60 = 140$

S265. Ans.(d)

Sol. Let, Total students who attended seminar = $360a$

Students in class X who attended seminar = $\frac{48}{360} \times 360a = 48a$

Students in class IX who attended seminar = $\frac{60}{360} \times 360a = 60a$

Required % = $\frac{48a}{60a} \times 100 = 80\%$

S266. Ans.(b)

Sol. Required ratio = $\frac{8000 \times \frac{90}{100} \times \frac{20}{100}}{15000 \times \frac{90}{100} \times \frac{55}{100}} = 32 : 165$

S267. Ans.(d)

Sol. No. of votes got by loser = $15000 \times \frac{90}{100} \times \frac{55}{100} \times \frac{48}{100}$
= 3564

S268. Ans.(a)

Sol. Required average = $\frac{10000 \times \frac{90}{100} \times \frac{60}{100} + 12000 \times \frac{90}{100} \times \frac{90}{100}}{2}$
= 7560

S269. Ans.(c)

Sol. No. of votes by which winner won

= $13500 \times \frac{90}{100} \times \frac{80}{100} \left[\frac{60}{100} - \frac{40}{100} \right]$

= $13500 \times \frac{90}{100} \times \frac{80}{100} \times \frac{20}{100}$

= 1944

S270. Ans.(e)

Sol. Valid votes casted in village C = $8000 \times \frac{90}{100} \times \frac{80}{100}$
= 5760

Valid votes casted in village A = $10000 \times \frac{90}{100} \times \frac{60}{100}$
= 5400

Required percent = $\frac{(5760-5400)}{5400} \times 100$

= $\frac{360}{5400} \times 100$

= $6\frac{2}{3}\%$

No. of valid votes casted in village C were $6\frac{2}{3}\%$ more than in village A.

S271. Ans.(b)**Sol.** Cars sold by companies C and D together

$$= 320 \times \frac{37.5}{100} + 520 \times \frac{55}{100}$$

$$= 120 + 286$$

$$= 406$$

Cars that remain unsold by Companies B and E together

$$= \left(275 - 275 \times \frac{64}{100}\right) + \left(485 - 485 \times \frac{60}{100}\right)$$

$$= 99 + 194$$

$$= 293$$

Required more %

$$= \frac{(406-293)}{293} \times 100$$

$$= \frac{11300}{293} = 38.56\% \approx 39\%$$

S272. Ans.(a)**Sol.** Cars sold by Company F = $280 \times \frac{67.5}{100}$

$$= 189$$

$$\% \text{ of petrol cars sold} = \left(100 - 66\frac{2}{3}\right) = 33\frac{1}{3}\%$$

$$\text{Number of petrol cars sold} = 189 \times 33\frac{1}{3} \times \frac{1}{100}$$

$$= 189 \times \frac{100}{300}$$

$$= 63$$

$$\text{Number of petrol cars manufactured in 2017} = 280 \times \frac{4}{(3+4)}$$

$$= 280 \times \frac{4}{7}$$

$$= 160$$

Required number of petrol cars that remains unsold

$$= 160 - 63$$

$$= 97$$

S273. Ans.(e)**Sol.** Total cars manufactured by six companies together in 2017 = $620 + 275 + 320 + 520 + 485 + 280 = 2500$

$$\text{Total cars manufactured by six companies together in 2016} = 2500 \times \frac{100-44}{100} = 2500 \times \frac{56}{100} = 1400$$

$$\text{Total number of cars remains unsold in 2016} = \frac{1400}{20} \times 7 = 490$$

S274. Ans.(c)

Sol. Total no. of cars sold by C = $320 \times \frac{37.5}{100} = 120$

Total number of cars that remain unsold by C = $320 - 120$
= 200

Profit got by C on selling cars

= 120×2 lakh

= 240 lakh

Loss incurred by C for cars that remain unsold

= $200 \times 80,000$

= 160 lakh

Overall profit = $(240 - 160)$ lakh

= 80 lakh

S275. Ans.(e)

Sol. Total cars manufactured by B, C and F together in 2017

= $275 + 320 + 280$

= 875

Total cars manufactured by B, C and F together in 2016

= $875 \times \frac{(100+40)}{100}$

= $875 \times \frac{140}{100}$

= 1225

Total cars sold by (B + C + F) in 2017

= $275 \times \frac{64}{100} + 320 \times \frac{37.5}{100} + 280 \times \frac{67.5}{100}$

= $176 + 120 + 189 = 485$

Total cars sold by (B + C + F) in 2016

= $485 \times \frac{180}{100}$

= 873

Cars that remain unsold in 2016 in (B + C + F) together

= $1225 - 873$

= 352

S276. Ans.(d)

Sol. Number of cricket player in L and M sports Academy together

= $350 \times \frac{30}{100} + 660 \times \frac{200}{300} = 105 + 440$

= 545

Number of Football players in N sports Academy

= $640 \times \frac{125}{200}$

= 400

Required percentage = $\frac{545}{400} \times 100$

= $136\frac{1}{4}\%$



S277. Ans.(b)**Sol.** Average number of cricket player in N and X sports Academy together

$$= \frac{1}{2} \left[640 \times \frac{3}{8} + 480 \times \frac{60}{100} \right]$$

$$= \frac{1}{2} [240 + 288] = \frac{528}{2} = 264$$

Average number of football player in K and Y sports Academy together

$$= \frac{1}{2} \left[360 \times \frac{45}{100} + 440 \times \frac{55}{100} \right]$$

$$= \frac{1}{2} [162 + 242] = 202$$

Required difference = 264 - 202 = 62

S278. Ans.(d)**Sol.** Number of players playing cricket in N sports Academy

$$= 640 \times \frac{3}{8} = 240$$

Let numbers of females playing cricket in N be x

Then, number of males in N sports Academy = 1.4x

ATQ,

$$x + 1.4x = 240$$

$$\Rightarrow x = 100$$

Number of players playing cricket in X sports Academy = $480 \times \frac{3}{5} = 288$

∴ Female players playing cricket in X sports Academy

$$= 288 - 240 = 48$$

∴ Total number of females playing cricket in 'N' and 'X' sports Academy together = 100 + 48 = 148

S279. Ans.(a)**Sol.** Players who left football from L and joined M

$$= \frac{1}{7} \times 350 \times \frac{70}{100}$$

$$= 35$$

Presently, Football players in M sports Academy

$$= 660 \times \frac{1}{3} + 35 = 220 + 35 = 255$$

& Cricket player in M = 660 - 220 = 440

$$\therefore \text{Required ratio} = \frac{440}{255} = 88 : 51$$

S280. Ans.(e)**Sol.** Male players playing cricket in 'X' sports Academy.

$$= \frac{1}{3} \times 480 \times \frac{60}{100} = 96$$

Female players playing cricket in 'L' sports Academy

$$= \frac{3}{7} \times 350 \times \frac{30}{100}$$

$$= 45$$

$$\therefore \text{Required percentage} = \frac{96}{45} \times 100$$

$$= 213 \frac{1}{3} \%$$

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S281. Ans.(d)

Sol. Total student in 6th class in RPM = $1500 \times \frac{16}{100} = 240$

Total student in 6th class in SVM = $\frac{20}{100} \times 2250 = 450$

Required difference = $450 - 240 = 210$

S282. Ans.(a)

Sol. Total student in 8th class in RPM

= $\frac{25}{100} \times 1500 = 375$

Girls in 8th class = $375 - 125 = 250$

Required % = $\frac{250}{1500} \times 100$

= $16\frac{2}{3}\%$

S283. Ans.(c)

Sol. Total student in class 10th in SVM

= $\frac{360}{2} \times 1 = 180$

Required % = $\frac{180}{2250} \times 100$

= 8%

S284. Ans.(e)

Sol. Required average = $\frac{1}{2} \left[\frac{40}{100} \times 2250 \right]$

= 450

S285. Ans.(a)

Sol. Required percentage = $\frac{1500-600}{2250} \times 100$

= $\frac{900}{2250} \times 100$

= 40%

S286. Ans.(d)

Sol. Required percentage = $\frac{(440+400)-(280+420)}{(440+400)} \times 100$

= $16\frac{2}{3}\%$

S287. Ans.(a)

Sol. Required ratio = $\frac{\frac{1}{2}(280+450)}{\frac{1}{2}(400+350)} = 73 : 75$

S288. Ans.(c)**Sol.** Total number of girls in school D

$$= \frac{55}{100} \times 240 + \frac{125}{2 \times 100} \times 400$$

$$= 132 + 250 = 382$$

Total number of boys in school D in both the years

$$= 240 + 400 - 382 = 258$$

$$\text{Required percentage} = \frac{258}{382} \times 100 \approx 68\%$$

S289. Ans.(a)

$$\text{Sol. Required difference} = \left[\frac{1}{3} (450 + 420 + 240) - \frac{1}{3} (400 + 350 + 300) \right]$$

$$= 370 - 350 = 20$$

S290. Ans.(b)

$$\text{Sol. Required avg.} = \frac{(450+350)+(420+300)+(240+400)}{3}$$

$$= 720$$

S291. Ans.(e)**Sol.** Defective cars by shop Y & K together

$$= \frac{3}{10} \times 1200 \times \frac{30}{100} + \frac{4}{10} \times 1200 \times \frac{45}{100}$$

$$= 108 + 216 = 324$$

Non-defective cars sold by Shop Z

$$= \frac{2}{10} \times 1200 \times \frac{65}{100} = 156$$

$$\text{Required difference} = 324 - 156$$

$$= 168$$

**S292. Ans.(b)**

$$\text{Sol. Required percentage} = \frac{\frac{1}{10} \times 1200 \times \frac{80}{100}}{\frac{4}{10} \times 1200 \times \frac{45}{100}} \times 100$$

$$= 44 \frac{4}{9} \% \approx 44\%$$

S293. Ans.(c)

$$\text{Sol. Required average} = \frac{1}{4} \left[\frac{1}{10} \times 1200 \times \frac{20}{100} + \frac{3}{10} \times 1200 \times \frac{30}{100} + \frac{2}{10} \times 1200 \times \frac{35}{100} + \frac{4}{10} \times 1200 \times \frac{45}{100} \right]$$

$$= \frac{432}{4} = 108$$

S294. Ans.(d)

$$\text{Sol. Required ratio} = \frac{\frac{2}{3} \times \frac{5}{10} \times 1200}{\frac{3}{10} \times 1200 \times \frac{70}{100} + \frac{2}{10} \times 1200 \times \frac{65}{100}}$$

$$= 50 : 51$$

S295. Ans.(e)

$$\text{Sol. Required cars sold} = \frac{75}{100} \times \frac{30}{100} \times \frac{3}{10} \times 1200 + \frac{70}{100} \times \frac{3}{10} \times 1200 = 81 + 252 = 333$$

S296. Ans.(d)

Sol. Total calls received by male in company A & D

$$= 6000 \times \frac{35}{100} + 8400 \times \frac{30}{100}$$

$$= 2100 + 2520$$

$$= 4620$$

Total calls received by female in company B & E

$$= 7500 \times \frac{48}{100} + 5400 \times \frac{45}{100}$$

$$= 6030$$

$$\text{Required sum} = 6030 + 4620$$

$$= 10650$$

S297. Ans.(d)

Sol. Total calls received by male in company C & E

$$= 7200 \times \frac{40}{100} + 5400 \times \frac{55}{100}$$

$$= 5850$$

Total calls received by female in company D

$$= 8400 \times \frac{70}{100}$$

$$= 5880$$

$$\text{Required difference} = 5880 - 5850 = 30$$

S298. Ans.(e)

Sol. Total calls received by female in company A

$$= 6000 \times \frac{65}{100}$$

$$= 3900$$

Total calls received by male in company B

$$= 7500 \times \frac{52}{100}$$

$$= 3900$$

$$\text{Required ratio} = \frac{3900}{3900}$$

$$= 1 : 1$$

S299. Ans.(c)

$$\text{Sol. Total calls received in company F} = 6000 \times \frac{65}{100} \times \frac{160}{100} = 6240$$

$$\text{Total calls received by male in company F} = 6240 \times \frac{25}{100} = 1560$$

$$\text{Total calls received by male in company D} = 8400 \times \frac{30}{100} = 2520$$

$$\text{Required average} = \frac{1560+2520}{2}$$

$$= \frac{4080}{2}$$

$$= 2040$$



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S300. Ans.(e)**Sol.** Total number of calls received by male in company A, C & E

$$= 6000 \times \frac{35}{100} + 7200 \times \frac{40}{100} + 5400 \times \frac{55}{100}$$

$$= 2100 + 2880 + 2970$$

$$= 7950$$

S301. Ans.(b)**Sol.** Let mart price of article B = 120

$$\text{So, selling price} = 120 \times \frac{1}{1.2} = 100$$

$$\text{Discount \%} = \frac{20}{120} \times 100 = 16 \frac{2}{3}\%$$

S302. Ans.(c)**Sol.** Let C.P. of article C = 100

$$\text{So M.P.} = 300$$

$$\text{S.P.} = \frac{300}{1.8} \times 1 = \frac{1000}{6} = \frac{500}{3}$$

$$\text{Profit\%} = \frac{\frac{500}{3} - 100}{100} \times 100 = \frac{200}{3}\% = 66 \frac{2}{3}\%$$

S303. Ans.(d)**Sol.** Profit (20%) = 50 Rs.

$$\text{C.P.} = \frac{50}{20} \times 100 = 250 \text{ Rs.}$$

$$\text{S.P.} = 250 + 50 = 300$$

$$\text{M.P.} = 300 \times 1.6 = 480$$

$$\text{Difference} = 480 - 250 = 230$$

**S304. Ans.(b)****Sol.** On article D

$$\text{M.P.} = 264 \text{ Rs.}$$

$$\text{S.P.} = \frac{264 \times 1}{2.4} = 110 \text{ Rs.}$$

$$\text{Profit \%} = \frac{30}{110 - 30} \times 100 = 37.5\%$$

S305. Ans.(c)**Sol.** Article A

$$\text{C.P.} = 200 \text{ Rs.}$$

$$\text{M.P.} = 200 \times 1.8 = 360$$

$$\text{Value of discount} = 360 \times \frac{0.5}{1.5} = 120 \text{ Rs.}$$

S306. Ans.(d)**Sol.** Total person came to PVR theatre

$$= \frac{28}{100} \times 4400$$

$$= 1232$$

$$\text{Required value} = \frac{(7-4)}{11} \times 1232 = 336$$

S307. Ans.(b)**Sol.** Total person come in Cinema theatre

$$= \frac{24}{100} \times 4400 = 1056$$

$$\text{Required value} = \frac{1}{2} \times \frac{[25 + (100 - 25 - \frac{100}{3})]}{100} \times 1056$$

$$= \frac{1}{200} \times \frac{200}{3} \times 1056 = 352$$

S308. Ans.(e)**Sol.** Total person come in DT theatre

$$= \frac{18}{100} \times 4400 = 792$$

$$\text{Required value} = \left[\frac{50}{3} + \frac{200}{3} \right] \times \frac{792}{100}$$

$$= 660$$

S309. Ans.(e)

$$\text{Sol. Required value} = \frac{24+18-14-16}{100} \times 4400$$

$$= \frac{12}{100} \times 4400 = 528$$

S310. Ans.(c)

$$\text{Sol. Required\%} = \frac{18}{24} \times 100$$

$$= 75\%$$

S311. Ans.(d)

$$\text{Sol. Total number of packets distributed in city X} = 6000 \times \frac{(100-48)}{100} \times \frac{4}{3} = 4160$$

$$\text{Total unconsumed packets in city X} = 4160 \times \frac{(100-35)}{100} = 2704$$

$$\text{Total unconsumed packets in A} = 4500 \times \frac{(100-24)}{100} = 3420$$

$$\text{Required difference} = 3420 - 2704 = 716$$



S312. Ans.(a)

Sol. Total consumed food packets in city A = $4500 \times \frac{24}{100} = 1080$

Total consumed food packets in city E = $4000 \times \frac{45}{100} = 1800$

Required difference = $1800 - 1080 = 720$

Total consumed food packets in the city B = $5500 \times \frac{35}{100} = 1925$

Total consumed food packets in the city D = $4500 \times \frac{30}{100} = 1350$

Required difference = $1925 - 1350 = 575$

Required ratio = $\frac{720}{575}$

= $144 : 115$

S313. Ans.(d)

Sol. Food packets consumed by female in city C = $6000 \times \frac{48}{100} \times \frac{45}{100} = 1296$

Total unconsumed food packets in city A = $4500 \times \frac{76}{100} = 3420$

Required percentage = $\frac{1296}{3420} \times 100$

= $37.89 \approx 38\%$

S314. Ans.(b)

Sol. Total unconsumed food packets in city A, B, C & E

= $4500 \times \frac{76}{100} + 5500 \times \frac{65}{100} + 6000 \times \frac{52}{100} + 4000 \times \frac{55}{100}$

= $3420 + 3575 + 3120 + 2200$

= 12315

S315. Ans.(c)

Sol. Total food packets distributed by Kerala government in flood

= $6000 \times \frac{48}{100} \times \frac{1025}{100}$

= 29520

Total food packets distributed in other cities except these five cities (A, B, C, D & E)

= $29520 - (4500 + 5500 + 6000 + 4500 + 4000)$

= $29520 - 24500$

= 5020

S316. Ans.(b)

Sol. Ratio of rate of ICICI and HDFC → $6 : 5$

Let load take from ICICI = $6x$

and that from HDFC = $5x$

Now,

$\frac{6x \times 2 \times 7.2}{100} + \frac{5x \times 2 \times 6}{100} = 14640$

$x = 10000$

Total amount borrowed = 110000

S317. Ans.(d)

$$\text{Sol. } \frac{6720 \times 100}{5.6 \times 3} - \frac{6720 \times 100}{6.4 \times 3} = 5000$$

S318. Ans.(c)

Sol. HDFC rate $\rightarrow 6\%$

Axis rate $\rightarrow 9\%$

Let amount he borrowed $\rightarrow 100x$

Let times of term = t

So, According to him amount he have to paid

$$= 100x + \frac{100x \times 6 \times t}{100} \dots \text{(i)}$$

Actually paid

$$= 100x + \frac{100x \times 9 \times t}{100} \dots \text{(ii)}$$

Extra payment from (i) and (ii)

$$\Rightarrow 3xt$$

Given %

$$\frac{3xt}{100x + 6xt} \times 100 = 11 \frac{7}{13}$$

$t = 5$ years.

S319. Ans.(e)

Sol. Let loan borrowed be 100x

$$\text{Required ratio} \Rightarrow \frac{100x + \frac{100x \times 3 \times 8.4}{100}}{100x + \frac{100x \times 3 \times 6.4}{100}}$$

$$= \frac{313}{298}$$

**S320. Ans.(a)**

Sol. Required difference

$$= 80000 \left[\frac{2 \times 7.2}{100} + \frac{2 \times 9}{100} - \frac{2 \times 6.4}{100} - \frac{2 \times 6}{100} \right]$$

$$= 6080$$

S321. Ans.(a)

Sol. Required percentage = $\frac{45}{75} \times 100$

$$= 60\%$$

S322. Ans.(b)

Sol. Required average = $\frac{1}{5} \times (64 + 60 + 72 + 40 + 84)$

$$= \frac{1}{5} \times 320$$

$$= 64$$

S323. Ans.(c)

$$\begin{aligned} \text{Sol. Required ratio} &= \frac{(80+60)}{(60+40)} \\ &= \frac{140}{100} = \frac{7}{5} \end{aligned}$$

S324. Ans.(d)

$$\begin{aligned} \text{Sol. Required difference} &= (60 + 80 + 45 + 75 + 90) - (64 + 60 + 72 + 40 + 84) \\ &= 350 - 320 \\ &= 30 \end{aligned}$$

S325. Ans.(b)

$$\begin{aligned} \text{Sol. Required percentage} &= \frac{90-84}{90} \times 100 \\ &= \frac{100}{15} = \frac{20}{3} \% = 6\frac{2}{3} \% \end{aligned}$$

S326. Ans.(e)

$$\begin{aligned} \text{Sol. Total number of females in HR department} &= 12 \times \frac{76}{24} = 38 \\ \text{Total number of females in Marketing department} &= 28 \times \frac{30}{70} = 12 \\ \text{Total number of females in Finance department} &= 50 \times \frac{37.5}{62.5} = 50 \times \frac{3}{5} = 30 \\ \text{Total number of females in Accounts department} &= 42 \times \frac{40}{60} = 28 \\ \text{Required difference} &= 30 + 28 - 38 - 12 = 58 - 50 = 8 \end{aligned}$$

S327. Ans.(c)

$$\begin{aligned} \text{Sol. Total number of employees in Accounts department} &= 42 \times \frac{100}{60} = 70 \\ \text{Total number of employees in HR department} &= 12 \times \frac{100}{24} = 50 \\ \text{Required \%} &= \frac{70-50}{50} \times 100 = 40\% \end{aligned}$$

S328. Ans.(a)

$$\begin{aligned} \text{Sol. Total number of males in Content department} &= \frac{125}{100} \times 28 = 35 \\ \text{Total number of females in Content department} &= \frac{140}{100} \times 50 \times \frac{100}{62.5} = 112 \\ \text{Total number of employees in Content department} &= 112 + 35 = 147 \end{aligned}$$

S329. Ans.(b)

$$\begin{aligned} \text{Sol. Total number of employees in Accounts department} &= 42 \times \frac{100}{60} = 70 \\ \text{Total number of females in HR and Marketing department together} &= 12 \times \frac{76}{24} + 28 \times \frac{30}{70} = 50 \\ \text{Required difference} &= 70 - 50 = 20 \end{aligned}$$

S330. Ans.(b)

Sol. Total number of employees in four departments together = $12 \times \frac{100}{24} + 28 \times \frac{100}{70} + 50 \times \frac{100}{62.5} + 42 \times \frac{100}{60}$
 $= 50 + 40 + 80 + 70 = 240$

Total number of typist in four department together = $\frac{240}{5} = 48$

S331. Ans.(d)

Sol. Required % = $\frac{\frac{2200 \times 5}{11} + \frac{2400 \times 5}{8}}{2200 \times \frac{6}{11} + 1600 \times \frac{3}{5}} \times 100 = \frac{1000 + 1500}{1200 + 960} \times 100$
 $= \frac{3125}{27} \% = 116\%$

S332. Ans.(b)

Sol. Required Average = $\frac{2200 \times \frac{5}{11} + 1800 \times \frac{4}{9} + 2400 \times \frac{5}{8} + 1600 \times \frac{2}{5}}{4}$
 $= \frac{1000 + 800 + 1500 + 640}{4} = 985$

S333. Ans.(d)

Sol. Difference of the number of male applicants from city P and female applicants from city R

$= 2400 \times \frac{5}{8} - 2200 \times \frac{6}{11} = 300$

Difference of the number of male and female applicants of city S = $1600 \times \frac{1}{5} = 320$

Required % = $\frac{320 - 300}{320} \times 100 = \frac{25}{4} = 6 \frac{1}{4} \%$

S334. Ans.(c)

Sol. Total number of applicants from City T

$= \frac{11}{8} \times \frac{1}{4} \times (2200 + 1800 + 2400 + 1600) = 2750$

Difference of male and female applicants from city R

$= \frac{2}{8} \times 2400 = 600$

Difference of the male and female applicants from city T = $2750 \times \frac{3}{25} = 330$

Required ratio = $\frac{600}{330} = 20 : 11$

S335. Ans.(b)

Sol. Required Sum = $2200 \times \frac{6}{11} + 1800 \times \frac{5}{9} + 2400 \times \frac{5}{8} + 1600 \times \frac{2}{5}$
 $= 1200 + 1000 + 1500 + 640 = 4340$

S336. Ans.(d)

Sol. Female who likes Comedy movies

$= \frac{40}{100} \times \frac{24}{100} \times 18000$
 $= 1728$

Female who likes Romantic movies

$= \frac{1728}{80} \times 100 = 2160$

Males who likes Romantic movies

$= \frac{22}{100} \times 18000 - 2160 = 1800$

S337. Ans.(a)

Sol. Required difference
 $= (24 + 25 - 16 - 13) \times 180$
 $= 3600$

S338. Ans.(c)

Sol. Required Average $= \frac{16+13+25}{300} \times 18000 = 3240$

S339. Ans.(e)

Sol. Males who like Sci fi movies

$$= \frac{35}{100} \times \frac{16}{100} \times 18000$$

$$= 1008$$

Female who likes Drama = 1008

Female who likes Sci fi = $16 \times 180 - 1008 = 1872$

Males who likes Drama = $13 \times 180 - 1008 = 1332$

Required ratio $= \frac{1872}{1332} = \frac{52}{37}$

S340. Ans.(a)

Sol. Required percent $= \frac{40}{(100-22)} \times 100$

$$= \frac{2000}{39} \%$$

S(341-345):

Let shop 'A' stitch 'x' and 'y' m cloth in week I and II respectively.

⇒ shop 'B' stitch 'x + 240' m and 'y - 60' m clothes in week I and week II respectively.

Total number of workers $= \frac{14,40,000}{12,000} = 120$

S341. Ans.(b)

Sol. Let no. of male workers = 'a'

⇒ No. of female workers = 'a - 14'

ATQ,

$$a + a - 14 = 120$$

$$\Rightarrow 2a = 134$$

$$\Rightarrow a = 67$$

S342. Ans.(d)

Sol. Quantity of clothes stitched by shop 'B' in both weeks together = (x + 240 + y - 60) m

$$= x + y + 180$$

But x + y = 1600 m

$$\Rightarrow \text{Quantity of clothes stitched by shop 'B'} = 1600 + 180 = 1780 \text{ m}$$

S343. Ans.(a)**Sol.** ATQ,

$$\frac{x}{y-60} = \frac{7}{4}$$

$$\Rightarrow 4x = 7y - 420 \dots(i)$$

$$\text{And } x + y = 1600 \dots(ii)$$

On solving (i) and (ii)

$$y = 620 \text{ m, } x = 980 \text{ m}$$

$$\text{Clothes stitched by shop 'B' in week I} = x + 240$$

$$= 980 + 240$$

$$= 1220 \text{ m}$$

S344. Ans.(c)**Sol.** Clothes stitched by shop 'A' in week I and II together = 1600 m

Clothes stitched by shop 'B' in week I and II together = 1600 + 240 - 60 = 1780 m .

Let, 'x' days taken by man to stitch cloth of shop 'A' in week I and week II together

$$\text{Then, } x = \frac{356}{1780} \times 1600 = 320 \text{ days}$$

S345. Ans.(d)**Sol.** ATQ,

$$x = \frac{75}{100}(y - 60)$$

$$4x = 3y - 180 \dots(i)$$

$$\text{And } x + y = 1600 \dots(ii)$$

On solving (i) and (ii)

$$x = 660 \text{ m, } y = 940 \text{ m}$$

clothes stitched by shop 'A' and 'B' together in week II

$$= y + y - 60$$

$$= 2 \times 940 - 60$$

$$= 1820 \text{ m}$$

Solutions (346-350):

Let the number of female in that village be 100x.

Then, number of males in that village

$$= 100x \times \frac{(100 + \frac{248}{9})}{100}$$

$$= \frac{1148x}{9}$$

ATQ,

$$100x + \frac{1148x}{9} = 8192$$

$$\Rightarrow x = 36$$

Number of female = 3600

Number of male = 8192 - 3600 = 4592



$$\text{Females speaking local language} = 3600 \times \frac{45}{100} = 1620$$

$$\text{Males speaking local language} = 4592 \times \frac{75}{100} = 3444$$

$$\text{Females speaking Hindi} = (4592 - 3444) + 337 = 1485.$$

$$\text{Males speaking Hindi} = \frac{1485}{11} \times 7 = 945$$

$$\text{Females speaking Dogri} = 3600 - 1620 - 1485 = 495.$$

$$\text{Males speaking dogri} = 4592 - 3444 - 945 = 203$$

S346. Ans.(d)

$$\text{Sol. Required \%} = \frac{(1485+945)}{3600} \times 100$$

$$= 67 \frac{1}{2}\%$$

S347. Ans.(b)

$$\text{Sol. Required difference} = 1620 - \frac{(1485+495)}{2}$$

$$= 1620 - 990$$

$$= 630$$

S348. Ans.(a)

Sol. Total number of males doing job and business

$$= 4592 - \frac{75}{100} \times 3444$$

$$= 2009$$

$$\text{Required\%} = \frac{\frac{2009 \times 4}{7}}{4592} \times 100 = 25\%$$

S349. Ans.(e)

$$\text{Sol. Required ratio} = \frac{1620}{(945+495)} = \frac{1620}{1440} = 9 : 8$$

S350. Ans.(c)

$$\text{Sol. Required average} = \frac{(3600-1620)+(4592-3444)}{2}$$

$$= \frac{1980+1148}{2} = 1564$$

Solutions (351-355):

Let total number of boys and girls like M.S. Dhoni is $13x$ & $7x$ respectively

And. Total number of boys like Virat Kohli = $7x - 30$

While total number of girls like Virat Kohli = $7x - 30 - 60 = 7x - 90$

ATQ -

$$13x + 7x + (7x - 30) + (7x - 90) = 900$$

$$34x = 1020$$

$$x = 30$$

Boys like M.S. Dhoni	Girls Like M.S. Dhoni	Boys Like Virat Kohli	Girls like Virat Kohli
$13 \times 30 = 390$	$7 \times 30 = 210$	$7 \times 30 - 30 = 180$	$7 \times 30 - 90 = 120$

S351. Ans.(a)

Sol. Required difference = $390 - 180 = 210$

S352. Ans.(b)

Sol. Required ratio = $\frac{210}{120}$

= 7 : 4

S353. Ans.(d)

Sol. Total number of boys like M.S. Dhoni & Virat Kohli = $390 + 180 = 570$

Total number of girls like M.S. Dhoni & Virat Kohli = $210 + 120 = 330$

Required percentage = $\frac{570-330}{330} \times 100$

= $\frac{240}{330} \times 100$

= $72 \frac{8}{11} \%$

S354. Ans.(d)

Sol. Total number of boys like M.S. Dhoni & Virat Kohli together in school 'Y'

= $210 \times \frac{7}{3} + 120 \times \frac{275}{100}$

= $490 + 330$

= 820

Required difference = $820 - (390 + 180)$

= 250

S355. Ans.(a)

Sol. Required average = $\frac{390+210}{2}$

= 300

S356. Ans.(b)

Sol. Let the speed of current be x km/hr.

And speed of boat in still water = $(x + 5)$ km/hr

ATQ,

$$\frac{2x+5}{x+5} = \frac{4}{3}$$

$$\Rightarrow 6x + 15 = 4x + 20$$

$$\Rightarrow 2x = 5$$

$$\Rightarrow x = 2.5 \text{ km/hr}$$

Speed of boat in downstream = $(2x + 5)$ km/hr = 10 km/hr

Required distance = $10 \times 3 = 30$ km/hr

S357. Ans.(d)

Sol. Let, length of train A be $2x$ m and speed be y m/s.

Then, length of train B is x m and speed of train B is $2y$ m/s.

ATQ,

$$\frac{2x}{y} = 4$$

$$\text{Required time} = \frac{(2x+x)}{(2y-y)} = \frac{3x}{y} = \frac{3 \times 2y}{y} = 6\text{s.}$$



S358. Ans.(a)

Sol. Let, length of train be x metres and speed be y m/s.

$$\frac{x+450}{y} = 20 \dots(i)$$

$$\frac{x+700}{y} = 30 \dots(ii)$$

Solving, $x = 50$ m and $y = 25$ m/s.

S359. Ans.(c)

Sol. Total distance = $8(5 - 3) = 16$ km

$$\text{Required time} = \frac{16}{(5+3)} = \frac{16}{8} = 2 \text{ hrs.}$$

S360. Ans.(b)

Sol. Let the speed of boat in still water be x km/hr and that of stream be y km/hr.

ATQ

$$(x + y) - (x - y) = 5$$

$$\Rightarrow y = 2.5 \text{ km/hr}$$

$$x = 2.5 \times 3.80 = 9.5 \text{ km/hr}$$

$$\text{required time} = \frac{42}{(9.5+2.5)} + \frac{31.5}{(9.5-2.5)} = 8 \text{ hr}$$

S361. Ans.(b)

Sol. Let the length of train is X m.

When they will travel in opposite directions, total distance travelled = $2X$.

and their speed will add up.

$$\text{Resultant speed} = \frac{5}{18} \times 72 + 40 \text{ms}^{-1}$$

$$= 20 \text{ms}^{-1} + 40 \text{ms}^{-1} = 60 \text{ms}^{-1}.$$

ATQ,

$$\frac{2X}{60} = 5 \Rightarrow X = \frac{300}{2} = 150 \text{ meters}$$

S362. Ans.(e)

Sol. Let speed of boat in still water be x km/hr

And speed of stream be y km/hr.

ATQ,

$$y = \frac{1}{5}(x + y)$$

$$x = 4y$$

$$\frac{48}{4y-y} = 4$$

$$y = 4 \text{ km/hr}$$

$$x = 16 \text{ km/hr}$$

Speed of train A = 16 km/hr

$$\text{Length of train A} = 16 \times \frac{5}{18} \times 36 = 160 \text{ m}$$

S363. Ans.(c)

$$\text{Sol. } \frac{\text{Time taken by Ram}}{\text{Time taken by Mohan}} = \frac{4}{3}$$

$$\frac{\text{speed of Ram}}{\text{Speed of Mohan}} = \frac{3}{4}$$

Now

When Mohan runs 4 m Ram runs 3 m and Mohan win by 1 m

So when Mohan wins the race by 1 m, race course is 4 m

When Mohan wins the race by 360 m, race course will be

$$360 \times 4 = 1440 \text{ m}$$

S364. Ans.(a)

$$\text{Sol. Speed of boat in upstream} = \frac{36}{8} = 4.5 \text{ km/hr}$$

$$\text{Speed of boat in upstream} = \frac{36}{5} = 7.2 \text{ km/hr}$$

$$\text{Speed of stream} = \frac{7.2 - 4.5}{2} = 1.35 \text{ km/hr}$$

S365. Ans.(c)

Sol. Let original time be 't'

And normal speed be 'x' km/hr

Normally it take $x \times t = 320$

After reduced

$$(x - 20) \times \left(t + \frac{48}{60}\right) = 320$$

Solving this $t = 3.2$ hours

**S366. Ans.(b)**

Sol. Distance covered by walking = 12 km

Distance covered by Run = 84 km

$$\text{Required time} = \frac{12}{8} + \frac{84}{12} = 8.5 \text{ hr}$$

S367. Ans.(d)

Sol. Let speed of boat in still water be x km/hr and speed of stream be y km/hr.

ATQ,

$$\frac{164}{(x-y)} = \frac{150}{100} \times \frac{164}{(x+y)}$$

$$2(x+y) = 3(x-y)$$

$$\therefore x = 5y$$

$$\therefore x = 5 \times 10 = 50 \text{ km/hr}$$

$$\therefore \text{Required time} = \frac{100}{50} = 2 \text{ hr.}$$

S368. Ans.(a)**Sol.** Let speed of boat in still water and downstream speed be $3x$ & $4x$ respectively

ATQ -

$$\frac{80}{3x} - \frac{80}{4x} = \frac{5}{3}$$

$$\frac{320-240}{12x} = \frac{5}{3}$$

$$x = 4 \text{ km/hr}$$

$$\text{Required time} = \frac{36}{3 \times 4 - (4-3) \times 4}$$

$$= 4.5 \text{ hours}$$

S369. Ans.(a)**Sol.** Let distance between city A to B is x km & between B to C is $(300 - x)$ km

ATQ -

$$\frac{300}{\frac{x}{90} + \frac{300-x}{60}} = 75$$

$$\frac{300 \times 360}{4x + 1800 - 6x} = 75$$

$$2x = 1800 - 1440$$

$$x = 180 \text{ km}$$

S370. Ans.(a)**Sol.** Let speed of man in still water = x km/hrSpeed of current = y km/hrLet $AB = BC = M$ km and $AC = 2M$ km

ATQ—

$$x + y = \frac{2M}{16} \dots(i)$$

$$x - y = \frac{M}{12} \dots(ii)$$

on solving (i) and (ii)

$$\frac{x}{y} = \frac{5}{1}$$

S371. Ans.(c)**Sol.** Let length of train A = length of train B = ℓ m

ATQ,

$$\Rightarrow \frac{\ell+98}{24} = \frac{\ell}{12} \times \frac{120}{100}$$

$$\ell = 70 \text{ m}$$

S372. Ans.(a)

	Upstream	Downstream
Ratio of time taken =	3	2
Ratio of Speed =	2	3

Sol.

$$\frac{3-2}{2} \rightarrow \frac{1}{2}$$

$$\Rightarrow \frac{1}{2} \rightarrow 2$$

$$\Rightarrow \text{Upstream Speed} = 2 \rightarrow 8$$

$$\Rightarrow \text{Downstream Speed} = 3 \rightarrow 12$$



Upstream speed = 8 km/h

Downstream speed = 12 km/h

$$\text{Required time} = \frac{36}{8} = \frac{9}{2} = 4.5 \text{ hour}$$

S373. Ans.(d)

Sol. Let, length of train = l m.

$$\text{ATQ, } \frac{l}{70+5} = 2 \Rightarrow l = 150 \text{ m}$$

$$\text{Now, Required time} = \frac{150+120}{70-55} = \frac{270}{15} = 18 \text{ sec.}$$

S374. Ans.(e)

Sol. Distance travelled by thief in 15 min = $60 \times \frac{15}{60} = 15 \text{ km}$

$$\text{Time taken by police to catch thief after 11:15 pm} = \frac{15}{65-60} = 3 \text{ hr}$$

So, the police will catch the thief at = 2:15 p.m

S375. Ans.(c)

Sol. let length of train A = l_A m and length of train B = l_B m.

$$\therefore \frac{l_A+l_B}{80-65} = \frac{110}{3} \text{ sec.}$$

$$\Rightarrow l_A + l_B = \frac{110}{3} \times 15$$

$$\Rightarrow l_A + l_B = 550 \text{ m.}$$

Also,

$$\frac{l_A}{80-65} = 20$$

$$l_A = 300 \text{ m}$$

$$\therefore l_B = (550-300) = 250 \text{ m}$$

$$\text{required ratio} = 300 : 250 = 6 : 5$$



S376. Ans.(c)

Sol. Let the initial quantity of solution be x lit

ATQ,

$$\frac{\text{Sugar}}{\text{water}} = \frac{\frac{x \times 3}{8} - \frac{30x}{100} \times \frac{3}{8}}{\left(\frac{x \times 5}{8} - \frac{30x}{100} \times \frac{5}{8}\right) + \frac{5x}{100}} = \frac{21x \times 80}{80 \times 39x} = 7:13$$

S377. Ans.(a)

Sol. Let the age of Rashmi 16 years hence be $10x$ years Then, 16 years hence Neha's age = $13x$ years

Present age of Rashmi = $(10x-16)$ years

Present age of Neha = $(13x-16)$ years

ATQ,

$$\frac{10x-16-8}{13x-16-8} = \frac{4}{7}$$

$$\Rightarrow 70x-168 = 52x-96$$

$$\Rightarrow 18x = 72$$

$$\Rightarrow x = 4$$

Present age of Rashmi = 24 years.

Present age of Neha = 36 years.

$$\text{Required \%} = \frac{12}{24} \times 100 = 50\%$$

S378. Ans.(b)**Sol.** ATQ,Let present age of A, B, C, D be $6x$, $8x$, $11x$ and $15x$ years respectively.

$$(6x - 4) + (8x - 4) + (11x - 4) + (15x - 4) = 64$$

$$40x = 80$$

$$x = 2$$

Difference of present age of B and D is

$$(15 - 8) \times 2 = 14 \text{ years}$$

S379. Ans.(c)**Sol.** Initially

Water = 50 lit

After 1st replacement

Water Wine

$$45 : 5$$

Water Wine

$$9 : 1$$

After 2nd replacement

$$\text{Water} = 45 - 5 \times \frac{9}{10} = 40.5 \text{ lit}$$

$$\text{Wine} = 5 - 5 \times \frac{1}{10} + 5 = 9.5 \text{ lit}$$

Water Wine

$$40.5 : 9.5$$

Water Wine

$$81 : 19$$

After 3rd replacement

$$\text{Water} = 40.5 - 10 \times \frac{81}{100} = 32.4 \text{ lit}$$

$$\text{Wine} = 9.5 - 10 \times \frac{19}{100} = 7.6 \text{ lit}$$

Required Ratio

$$7.6 : 32.4 : 10$$

$$19 : 81 : 25$$

S380. Ans.(d)**Sol.** Let total quantity of mixture of milk and water in vessel = $11x$ liters

$$\text{Quantity of milk in mixture} = 11x \times \frac{3}{11} = 3x \text{ l}$$

$$\text{Quantity of milk in the final mixture when given process repeated two times} = 3x \left(1 - \frac{1}{4}\right)^2$$

$$= 3x \times \frac{9}{16}$$

$$= \frac{27x}{16}$$

ATQ -

$$\frac{27x}{16} = 40.5$$

$$x = \frac{40.5 \times 16}{27}$$

$$x = 24$$

$$\text{Initial quantity of water in the mixture} = 24 \times 8 = 192 \text{ l}$$



S381. Ans.(a)

Sol. Let age of Veer, Sameer, Divyaraj & Ayush be V, S, D & A respectively

ATQ -

$$V + S = 2D + 6 \text{ ----- (i)}$$

$$V + A = 2D \text{ ----- (ii)}$$

$$\text{Given, } \frac{S+A}{2} = 25$$

$$S + A = 50 \text{ ----- (iii)}$$

$$\text{And, } \frac{V+S+D+A}{4} = 25$$

$$V + S + D + A = 100 \text{ ----- (iv)}$$

From (i) & (ii) -

$$S - A = 6 \text{ ----- (v)}$$

From (iii) & (v) -

$$2S = 56$$

$$S = 28 \text{ years}$$

$$A = 22 \text{ years}$$

From (i) (iii) & (iv) -

$$V + S + D + A = 100$$

$$D = 24 \text{ years}$$

$$V = 100 - (28 + 24 + 22)$$

$$V = 26 \text{ years}$$

Required difference between age of Veer and Divyaraj = $26 - 24 = 2$ years.

S382. Ans.(a)

Sol. Let $200x$ and $300x$ be the volume of milk and Mango Juice in the mixture.

$$\text{Amount of water in milk} = \frac{90}{100} \times 200x = 180x$$

$$\text{Amount of water in Mango Juice} = \frac{80}{100} \times 300x = 240x$$

When 10 liters of water is added

$$\% \text{ of water becomes } \frac{260}{3} \%$$

$$\text{Hence } \frac{180x+240x+10}{500x+10} = \frac{260}{300}$$

$$\Rightarrow \frac{420x+10}{500x+10} = \frac{13}{15}$$

$$\Rightarrow \frac{42x+1}{50x+1} = \frac{13}{15}$$

$$\Rightarrow 630x + 15 = 650x + 13$$

$$\Rightarrow 20x = 2$$

$$\Rightarrow x = \frac{1}{10} \text{ liters}$$

$$\text{Hence milk by volume is} = 200 \times \frac{1}{10} = 20 \text{ liters}$$

$$\text{Water present in milk is} = \frac{90}{100} \times 20 = 18 \text{ liters}$$

S383. Ans.(e)**Sol.** Let age of A and B is $7x$ and $8x$ respectivelyAge of A's two sisters is $3Y$ and $4Y$

ATQ,

$$4Y - 7x = 11$$

and $3Y = 8x$

on solving $x = 3, y = 8$

sum of their age after 10 years

$$(7 \times 3 + 8 \times 3 + 3 \times 8 + 4 \times 8) + 10 \times 4$$

$$\Rightarrow (21 + 24 + 24 + 32) + 40 \Rightarrow 141 \text{ years}$$

S384. Ans.(c)

Sol. Milk in mixture = $240 \times \frac{5}{8} = 150 \ell$

Water in mixture = $240 \times \frac{3}{8} = 90 \ell$

Milk and water in 64ℓ which taken out

Milk = $64 \times \frac{5}{8} = 40 \ell$

Water = $64 \times \frac{3}{8} = 24 \ell$

Remain milk and water in vessel

Milk = $(150 - 40) = 110 \ell$

Water = $(90 - 24) + 14 = 80 \ell$

Milk and water in 76ℓ which taken out

Milk = $76 \times \frac{11}{19} = 44$

water = $76 \times \frac{8}{19} = 32$

Remain milk and water in final mixture

Milk = $(110 - 44) = 66$

Water = $(80 - 32) = 48$

Required% = $\frac{66}{114} \times 100$

$$= 57 \frac{17}{19} \%$$

S385. Ans.(b)**Sol.** Let the present age of P be x yrs.and the present age of Q be y yrs.

ATQ,

$$x + y = 82 + 12 = 94 \text{ yrs. ... (i)}$$

and,

$$y - 14 = x$$

$$\Rightarrow x - y = -14 \text{ ... (ii)}$$

On solving (i) and (ii), we get

$$x = 40 \text{ yrs.}$$

P's age 4 years later = $40 + 4 = 44 \text{ yrs.}$



S386. Ans.(a)

Sol. Total milk in vessel = $288 \times \frac{11}{18} = 176 \text{ l}$

Total water in vessel = $288 \times \frac{7}{18} = 112 \text{ l}$

Let $x \text{ l}$ of mixture is taken out and replaced with water

ATQ -

$$\frac{176 - x \times \frac{11}{18}}{112 - x \times \frac{7}{18} + x} = \frac{11}{13}$$

$$\frac{288 - x}{2016 - 7x + 18x} = \frac{1}{13}$$

$$3744 - 13x = 2016 + 11x$$

$$24x = 1728$$

$$x = 72 \text{ l}$$

Total water in final mixture = $112 - 72 \times \frac{7}{18} + 72 = 156 \text{ l}$

Required ratio = $112 : 156$

$$= 28 : 39$$

S387. Ans.(e)

Sol. Milk left in vessel A = 10 lit.

In vessel B,

Ratio of milk : water = $10 : 25 = 2 : 5$

In 21 lit of mix.

Quantity of milk = $\frac{21}{7} \times 2 = 6 \text{ lit.}$

Quantity of water = $21 - 6 = 15 \text{ lit.}$

Now, in vessel A

Required ratio = $\frac{10+6}{15} = 16 : 15.$

**S388. Ans.(b)**

Sol. 1st mix 2nd mix

62% 83%

69%

14 : 7

Required quantity of 62% milk content = $8 \times \frac{14}{7} = 16 \text{ lit}$

S389. Ans.(a)

Sol. Let present age of son be x years

Present age of father = $(2x + 6) \text{ yr}$

ATQ

$$\frac{(x+4) + (2x+6+4)}{2} = 34$$

$$x = 18$$

Required ratio = $\frac{18}{42} = 3 : 7$

S390. Ans.(c)

$$\begin{aligned} \text{Sol. Remain work} &= 96 \times \frac{5}{18} - 24 \times \frac{5}{8} \\ &= 60 - 15 \\ &= 45 \ell \end{aligned}$$

$$\begin{aligned} \text{Remaining water} &= 96 \times \frac{3}{8} - 24 \times \frac{3}{8} \\ &= 36 - 9 \\ &= 37 \ell \end{aligned}$$

Let $3x \ell$ of milk and $5x \ell$ of water added

ATQ—

$$\frac{45+3x}{27+5x} = \frac{15}{13}$$

$$585 + 39x = 405 + 75x$$

$$36x = 180$$

$$x = 5 \ell$$

$$\text{Quantity of water added} = 5 \times 5 = 25 \ell$$

S391. Ans.(c)

$$\begin{aligned} \text{Sol. Cost price of mixture} &= 357 \times \frac{100}{120} \\ &= \text{Rs } \frac{595}{2} \end{aligned}$$

$$\begin{array}{ccc} \therefore & 260 & 320 \\ & \swarrow & \searrow \\ & \frac{595}{2} & \\ & \swarrow & \searrow \\ & \frac{45}{2} & \frac{75}{2} \end{array}$$



$$\frac{X}{(X+8)} = \frac{3}{5} \Rightarrow X = 12 \text{ kg}$$

S392. Ans.(c)

$$\text{Sol. Cost price of ball} = \text{Rs. } 105$$

$$\text{Cost price of bat} = (322 - 42) = 280$$

$$\text{Profit \% on both bat and ball} = \frac{84}{385} \times 100 = 21 \frac{9}{11} \%$$

S393. Ans.(c)

Sol. Let price of type A wheat be Rs. x per kg and price of type B wheat be Rs. y per kg

ATQ,

$$12 \times x + 18 \times y = 30 \times 1.2x$$

$$18y = 36x - 12x$$

$$18y = 24x$$

$$x : y = 3 : 4$$

S394. Ans.(a)**Sol.** Let, Cost price of a pen $\rightarrow x$ And S.P. $\rightarrow y$

According to question.

$$\Rightarrow 5y - 5x = 2x$$

$$\frac{y}{x} = \frac{7}{5}$$

$$\text{Profit \%} \Rightarrow \frac{7-5}{5} \times 100 = 40\%$$

$$40\% \rightarrow 20 \text{ Rs.}$$

$$\text{S.P.} \Rightarrow [100 + 40]\% \rightarrow 70 \text{ Rs.}$$

S395. Ans.(a)**Sol.** Let the selling price of both articles be Rs. $100x$ each

$$\text{Cost price of one article} = \frac{100x}{120} \times 100 = \text{Rs. } \frac{250x}{3}$$

$$\text{Cost price of another article} = \frac{100x}{8} \times 7 = \frac{700x}{8}$$

$$\text{Required ratio} = \frac{\frac{250x}{3}}{\frac{700x}{8}} = 20:21$$

S396. Ans.(b)**Sol.** Cost price — $17,500 + 2,500 = \text{Rs. } 20,000$

S.P. = Rs. 22,500

$$\text{Profit} = 22,500 - 20,000 \Rightarrow \text{Rs. } 2,500$$

$$\text{Profit \%} = \left(\frac{2,500}{20,000} \times 100 \right) \% = 12.5\%$$

**S397. Ans.(c)****Sol.** $8 \times \text{SP} = 12 \times \text{CP}$

$$\frac{\text{SP}}{\text{CP}} = \frac{12}{8}$$

Profit = 4

$$\text{Profit \%} = \frac{4}{8} \times 100 = 50\%$$

S398. Ans.(a)**Sol.** Let C.P. of a sandal = Rs. $3x$. \therefore C.P. of a shoe = Rs. x Let S.P. of one shoes be Rs. a And SP of one sandal be Rs. b

ATQ,

$$\frac{4a}{12 \times 3x} \times 100 = \frac{6b}{12 \times x} \times 100$$

$$a : b = 9 : 2$$

S399. Ans.(a)**Sol.** We know, % Discount = 20% = % mark upLet cost price be Rs. $100x$. \therefore marked price = $120x$ & selling price = $96x$

ATQ,

$$100x - 96x = 50$$

$$\therefore x = 12.5$$

$$\therefore \text{cost price} = 12.5 \times 100 = \text{Rs. } 1250$$

S400. Ans.(b)**Sol.** Let SP of P's article and that of Q's article be Rs. $100x$.CP of P's article = Rs. $90x$ And CP of Q's article = $\frac{6}{5} \times 100x = \text{Rs. } 120x$ Total loss = $(120x + 90x) - (100x + 100x) = \text{Rs. } 10x$

ATQ,

$$10x = 1800 \Rightarrow x = 180$$

$$\text{Required average} = \frac{(90+120)}{2} \times 180 = \text{Rs. } 18,900$$

S401. Ans.(b)**Sol.** Let veer can do $(x - 4)$ unit of work in one dayAnd Ayush can do $(x + 4)$ unit of work in one day

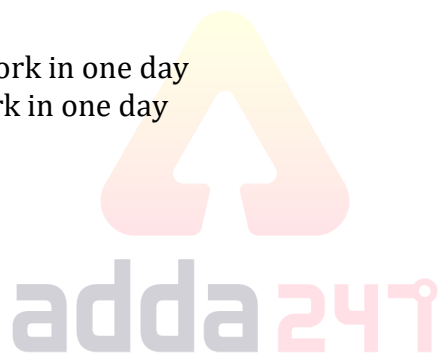
So,

$$(x - 4) \times 5 = (x + 4) \times 3$$

$$5x - 20 = 3x + 12$$

$$2x = 32$$

$$x = 16$$

**S402. Ans.(b)****Sol.** Given, $3m = 5w$ Hence, $21m = 35w$

Now,

$$21w \times 20 \times 10 = 35w \times 8 \times d$$

$$\text{or, } d = \frac{21 \times 20 \times 10}{35 \times 8}$$

$$d = 15 \text{ days.}$$

S403. Ans.(e)**Sol.** Let efficiency of A be $3x$ units/dayThen, that of B = $2x$ units/dayTotal work = $3x \times 36 = 108x$ unitsC does $\left(1 - \frac{7}{9}\right)$ th i.e. $\frac{2}{9}$ th of work in 24 daysWhole work will be completed by C in $24 \times \frac{9}{2} = 108$ days

$$\text{Efficiency of C} = \frac{108x}{108} = 1x \text{ unit/day}$$

$$\text{Required time} = \frac{108x}{3x+2x+1x} = 18 \text{ days}$$

S404. Ans.(c)

Sol. Work done by Arjun in 1 day = $\frac{1}{12}$

Work done by Arjun and Tanya in 1 day = $\frac{1}{8}$

Work done by Tanya in 1 day = $\frac{1}{8} - \frac{1}{12} = \frac{1}{24}$

Number of days Tanya need to complete the work = 24 days

Number of days Tanya need to complete 75% of work = $\frac{75}{100} \times 24 = 18 \text{ days}$

S405. Ans.(d)

Sol. One day work of A and B = $\frac{1}{6} + \frac{1}{8} = \frac{8+6}{48}$

They together can do in

= $\frac{48}{14} = \frac{24}{7}$ days

∴ P and Q together can do in = $\frac{24}{7}$ days.

∴ P can do it in

= $\frac{24}{7} \times \frac{4}{3} = \frac{32}{7}$ days

= $4\frac{4}{7}$ days.

S406. Ans.(d)

Sol. Let, Efficiency of B = 2x

Efficiency of A = 3x

Total work = $36 \times 5x = 180x$

B complete whole work = $\frac{180x}{2x} = 90$ days

S407. Ans.(b)

Sol. 1 women earn Rs. — $\frac{480}{3} = \text{Rs. } 160$

9 women earn Rs. = $160 \times 9 = \text{Rs. } 1,440$

1 men earn Rs. — $\frac{480}{5} = \text{Rs. } 96$

7 men earn Rs. 672

In two days, total earning = $2,112 \times 2 = \text{Rs. } 4,224$

S408. Ans.(e)

Sol. Let efficiency of men and women be m and w.

∴ $4w = 1m$

ATQ,

$12m \times 6 \times 4 = 6w \times d \times 8$

[d → no. of days in which women can complete the work]

$D = \frac{12 \times 4w \times 6 \times 4}{6w \times 8}$

= 24 days.



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S409. Ans.(d)

Sol. A can complete work alone = $\frac{24}{3} \times 5 = 40 \text{ days}$

B can complete the work alone = $\frac{45}{3} \times 4 = 60 \text{ days}$

Let Total work = 120 units

Efficiency of A = 3 units/day

Efficiency of B = 2 units/day

Total work complete by A + B = $5 \times \frac{70}{3} = \frac{350}{3} \text{ units}$

Remaining work = $120 - \frac{350}{3} = \frac{10}{3}$

C work for = $23 \frac{1}{3} - 20 = \frac{10}{3} \text{ days}$

Efficiency of C = $\frac{10}{3} \times \frac{3}{10} = 1 \text{ units/day}$

So, C alone complete the work = $\frac{120}{1} = 120 \text{ days}$

S410. Ans.(d)

Sol. Let efficiency of B = $5x \text{ units/day}$

So, efficiency of A = $5x \times \frac{140}{100} = 7x \text{ units/day}$

Total work = $(5x + 7x) \times 16 = 192x \text{ units}$

C & D take together = $16 \times \frac{3}{4} = 12 \text{ days}$

Efficiency of C & D = $\frac{192x}{12} = 16x \text{ units}$

Required days = $\frac{192x}{(16x+5x)}$

= $9 \frac{1}{7} \text{ days}$

**S411. Ans.(a)**

Sol. Let P, Q and R takes time p, q and r hours respectively to complete the work alone

ATQ,

$$\frac{1}{p} + \frac{1}{q} + \frac{1}{r} = \frac{1}{11} \dots (i)$$

After being opened for 6 hours, cistern remaining to be filled = $1 - 6 \times \frac{1}{11} = \frac{5}{11}$

Now,

$$\frac{8}{p} + \frac{8}{r} = \frac{5}{11}$$

$$\frac{1}{p} + \frac{1}{r} = \frac{5}{88} \dots (ii)$$

From (i) & (ii)

$$\frac{1}{q} = \frac{1}{11} - \frac{5}{88}$$

$$\frac{1}{q} = \frac{3}{88}$$

Q alone can fill the cistern in = $\frac{88}{3} = 29 \frac{1}{3} \text{ hrs}$

S412. Ans.(a)**Sol.** Let filling capacity of pump be 'x' m³ per minThen, emptying capacity of pump is (x + 10) m³ per min

ATQ,

$$\frac{2400}{x} - \frac{2400}{x+10} = 8$$

$$\Rightarrow 2400 \left[\frac{x+10-x}{x^2+10x} \right] = 8$$

$$\Rightarrow x^2 + 10x - 3000 = 0$$

$$\Rightarrow (x - 50)(x + 60) = 0$$

$$\Rightarrow x = 50, -60$$

Filling capacity of pump is 50 m³ per min.**S413. Ans.(d)****Sol.** Ratio of efficiency of A and B=2:3

Let time taken by A and B alone to fill cistern individually be 3x hours and 2x hours respectively.

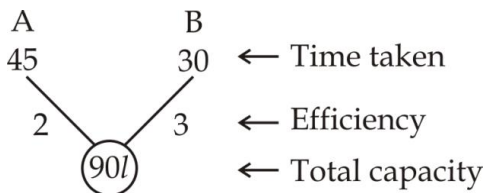
ATQ,

$$\frac{1}{3x} + \frac{1}{2x} = \frac{1}{18}$$

$$\Rightarrow x = 15$$

A alone will fill cistern in 15 × 3 = 45 hours

B alone will fill cistern in 15 × 2 = 30 hours



Now, A alone is opened for first 3 hrs and then B alone is opened for next 1 hr till the whole cistern get filled .

So, cistern filled in 4 hrs = 3 × 2 + 3 = 9 L

9L cistern is filled in 4 hrs

⇒ 90 L cistern will be filled in = 4 × 10 = 40 hrs

S414. Ans.(d)**Sol.** Let R alone can empty the cistern in x hr.

∴ P alone can fill cistern in 2 hr

Q can fill cistern in 3 hr

Atq,

For 1 hour

$$\frac{1}{2} + \frac{1}{3} - \frac{1}{x} = \frac{7}{12}$$

$$\frac{1}{x} = \frac{5}{6} - \frac{7}{12}$$

$$\frac{1}{x} = \frac{3}{12}$$

$$x = 4 \text{ hr}$$

S415. Ans.(a)

Sol. Let work done by A , B and C in 1 day = 1 unit

Work done by A , B and C in 40 days = 40 unit

Work done by (A , B and C) in 16 days = 16 unit

Remaining work = 40 - 16 = 24 unit

Work done by (B and C) in 40 days = 24 unit

Efficiency of (B and C) = $\frac{24}{40} = 0.6$ unit/day

Efficiency of A = Efficiency of (A , B and C) - Efficiency of (B and C)

= 1 - 0.6

= 0.4 unit/day

A alone will do work in = $\frac{40}{0.4} = 100$ days

S416. Ans.(d)

Sol. Let tens digit be x and unit digit be y

Then, number = 10x + y

So,

$$\frac{(10x+y) \times 175}{100} = 10y + x$$

$$\Rightarrow y = 2x$$

y is two times of x

So,

$$y = x + 3$$

$$x = 3$$

$$y = 6$$

Number = 36

**S417. Ans.(b)**

Sol. Let he plays x inning in second series.

Then according to question

$$\frac{47 \times 8 + x \times 50}{8 + x} = 48$$

$$\Rightarrow 376 + 50x = 384 + 48x$$

$$2x = 8$$

$$x = 4$$

Hence he played 4 innings in second series.

S418. Ans.(e)

Sol. Let original number is x

$$\text{So } x \times \frac{125}{100} \times \frac{70}{100} \times \frac{1}{2} \times x = 2800$$

$$x^2 = 6400$$

$$x = 80$$

S419. Ans.(b)

Sol. Let total cost price $\Rightarrow 100x$

Selling price $\Rightarrow 120x$

2nd selling price $\Rightarrow 70x + \frac{30x \times 150}{100}$

$$= 115x \times \frac{120}{100} = 138x$$

Now,

$$138x - 120x = 450$$

$$18x = 450$$

$$x = 25 \text{ Rs.}$$

$$\text{Cost of packaging} = 25 \times 20 = 500 \text{ Rs.}$$

S420. Ans.(d)

Sol. Let two digit number = $10x + y$

Reversed = $10y + x$

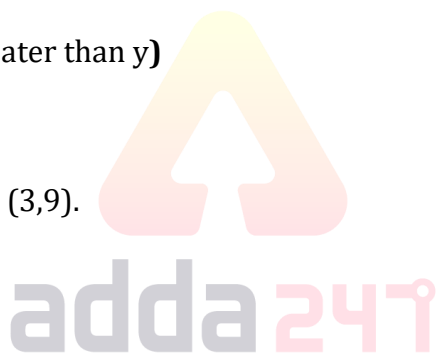
$$\text{Sum} = 11(x+y)$$

ATQ, $11(x+y) = 22(x-y)$, (say, x is greater than y)

$$\text{Or, } x+y = 2x-2y$$

$$\text{Or, } x = 3y$$

Possible cases for x,y are (1,3), (2,6), (3,9).

**S421. Ans.(d)**

Sol. Q got = $100x$ votes

So, P got = $50x$ votes

Total votes = $150x$ votes

For tie \rightarrow Q's votes = P's votes = $75x$

$$\Rightarrow 100x - 75x = 200$$

$$\Rightarrow x = 8$$

$$\text{Total votes} \rightarrow 8 \times 150 = 1200$$

$$\text{Required number} = 1200 \times 8 = 9600$$

S422. Ans.(e)

Sol. Total weight = $x \times 35$

After subtracting '25'

$$\Rightarrow \frac{n \times 35 - 25}{n-1} = 36$$

Solving $n = 11$

S423. Ans.(a)**Sol.** Let Sumit have $\rightarrow a$ He get from Abhishek = $\frac{3}{2}a$ From Veer $\Rightarrow 3 \times \frac{3}{2}a = \frac{9}{2}a$

ATQ,

$$a + \frac{3}{2}a + \frac{9}{2}a = 35000$$

$$7a = 35000$$

$$a = 5000$$

$$\text{Abhishek give} = \frac{3}{2} \times 5000 = 7500$$

S424. Ans.(d)**Sol.** Let Number is x

$$x \times \frac{450}{100} \times \frac{2}{x} = \frac{45}{100}x$$

$$x = 20$$

S425. Ans.(b)**Sol.** For value of 'x'Minimum value of $|y|$ we needMinimum value of $|y|$ is 0

So,

$$x = 0 - 10 = -10$$

S426. Ans.(d)**Sol.** Let odd number series be $x, x + 2, x + 4, x + 6, x + 8$

Then, even number series will be

 $x - 9, x - 7, x - 5, x - 3, x - 1$ Average of odd number series = $(x + 4)$ Avg. of even number series = $(x - 5)$ Required difference = $x + 4 - (x - 5) = 9$ **S427. Ans.(c)****Sol.** Number of arrows Arjun can shoot in 5 minutes 60.

The number of birds killed by karan

$$= 60 - \left[\frac{60}{100} \times 60 \right]$$

$$= 24$$

Karan killed = 24 birds in 80 shot

$$\text{Therefore } x = \frac{24}{80} \times 100$$

$$= 30\%$$



S428. Ans.(d)**Sol.** Let average expenditure is $\rightarrow x$

ATQ,

$$20 \times x = 16 \times 64 + 4(x + 4)$$

$$x = 65$$

$$\text{Total expenditure} = 65 \times 20 = 1300$$

S429. Ans.(c)**Sol.** Let 50 paise coins $\rightarrow 2x$ So, 10 paise coins $\rightarrow 3x$

ATQ,

$$\frac{2x}{2} + \frac{3x}{10} = 7.8$$

$$x = 6$$

value of 50 paise coins $\rightarrow 6$ value of 10 paise coins $\rightarrow 1.8$

$$\text{Required \%} = \frac{1.8}{6} \times 100 = 30\%$$

S430. Ans.(d)**Sol.** Let salary of Abhi and Shek is $25x$ and $27x$ respectivelyLet expenditure be $9y$ and $10y$ respectively

ATQ,

$$25x - 9y = 27x - 10y$$

$$2x = y$$

$$\frac{x}{y} = \frac{1}{2}$$

$$\text{Saving of Abhi} \Rightarrow 25x - 9y$$

$$= 25x - 18x = 7x$$

$$\text{Required \%} = \frac{7x}{25x} \times 100 = 28\%$$

S431. Ans.(a)**Sol.** Let the investment of Ravi = $100x$ Investment of Sikha = $125x$ Investment of Mohit = $100x$

Ravi Sikha Mohit

 $100x$ $125x$ $100x$

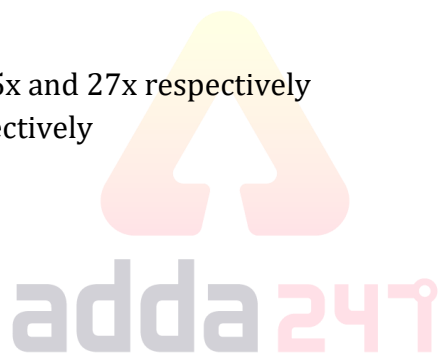
4 : 5 : 4

ATQ,

$$(4 \times 3 + 4 \times 5) \text{ unit} = 1600$$

$$1 \text{ unit} = 50$$

Profit share of Sikha = Rs 1000



S432. Ans.(d)**Sol.** Ratio of Profit

Veer : Rahul

$$2 \times 4 : 3 \times 3$$

$$8 : 9$$

Let profit of Veer and Rahul be $8x$ & $9x$ respectively.

ATQ,

$$9x - 8x = 150$$

$$\therefore x = \text{Rs. } 150$$

$$\therefore \text{Total profit} = 17x = 17 \times 150 = \text{Rs. } 2550.$$

S433. Ans.(b)**Sol.** Let Deepak invested Rs. x and Ayush invested Rs. $(12,600 - x)$

ATQ—

$$\frac{x \times 8}{(12600 - x) \times 15} = \frac{128}{75}$$

$$5x = 201600 - 16x$$

$$21x = 201600$$

$$x = 9600 \text{ Rs.}$$

$$\text{Invested of Ayush} = (12600 - 9600) = 3000 \text{ Rs.}$$

S434. Ans.(e)**Sol.** Let amount invested by Rimi in scheme A be Rs x Then amount invested by Sri = Rs $(x+650)$

ATQ

$$\frac{x}{x+650} = \frac{100}{100+62.5}$$

$$x = \text{Rs } 1040$$

$$\text{Sum of amount invested by both} = 2 \times 1040 + 650 = \text{Rs } 2730$$

S435. Ans.(a)**Sol.** Let amount invested by Z be Rs $100x$ Amount invested by A = Rs $122.5x$ Amount invested by B = Rs $80x$

ATQ

$$42.5x = 765$$

$$\Rightarrow 22.5x = \text{Rs } 405$$

S436. Ans.(b)**Sol.** Let investment of Sahil is $100x$ So Sumit's investment = $150x$ Let time of investment is $2y$ and y

Profit ratio = Sumit : Sahil

$$\frac{150x \times 2y}{100x \times y} = 3 : 1$$

ATQ—

$$\text{Total profit} = \frac{7550 \times 4}{2}$$

= Rs. 15100

S437. Ans.(a)**Sol.** Let, amount invested by A, B and C is 'a', 'b' and 'c' respectively.

ATQ.

$$a + c = 2b \dots(i)$$

$$a + b = 3c \dots(ii)$$

on solving (i) & (ii) we get

$$4a = 5b \text{ \& } 3b = 4c$$

$$\Rightarrow a : b : c$$

$$5 : 4 : 3$$

Ratio of profit

A	:	B	:	C
5×6	:	4×9	:	3×12
5	:	6	:	6

$$\text{B's profit} = \frac{6}{17} \times 3400 = 1200$$

S438. Ans.(e)**Sol.** Let the investment of A, B and C be Rs. $3x$, Rs. $5x$ and Rs. y . respectively

Therefore,

A B C

$$3x \times 12 \quad 5x \times 12 \quad y \times 6$$

$$36x \quad 60x \quad 6y$$

ATQ,

$$60x = 6y \Rightarrow y = 10x$$

$$\text{Required percentage} = \frac{3x}{10x} \times 100 = 30\%$$

S439. Ans.(d)**Sol.** Investment ratio of Veer : Bhavya = $9 : 10$ Let total profit be Rs $76x$

$$\text{Share of Bhavya} = \frac{76x \times 50}{100} \times \frac{1}{2} + \frac{38x \times 10}{19} = Rs \ 39x$$

But, if profit was divided in investment ratio, then

$$\text{Bhavya's share} = \frac{76x \times 10}{19} = Rs. \ 40x$$

ATQ,

$$40x - 39x = 1500$$

$$\Rightarrow 76x = 1500 \times 76 = Rs \ 1,14,000$$

S440. Ans.(b)**Sol.** Let total investment be Rs x

$$\therefore \text{Investment of Abhi} = \text{Rs } \frac{x}{3}$$

$$\text{Remaining investment} = \text{Rs } \frac{2x}{3}$$

$$\therefore \text{Investment of Archit + Nik together} = \frac{2x}{3}$$

$$\text{Abhi} + \text{Nik} + \text{Nik} = \frac{2x}{3}$$

$$\frac{x}{3} + 2 \times \text{Nik} = \frac{2x}{3}$$

$$\therefore \text{Investment of Nik} = \frac{x}{6}$$

$$\therefore \text{Investment of Archit} = \frac{2x}{3} - \frac{x}{6} = \frac{x}{2}$$

S441. Ans.(d)

$$\text{Sol. } \frac{x \times 5}{100} = \frac{(9600 - x) \times 3}{100}$$

$$\Rightarrow 5x = 28800 - 3x$$

$$8x = 28800$$

$$x = 3600$$

$$2^{\text{nd}} \text{ part} = 9600 - 3600 = 6000$$

$$\text{Total Income/Interest} = \frac{3600 \times 5}{100} + \frac{6000 \times 3}{100}$$

$$= 180 + 180 = 360$$

S442. Ans.(c)**Sol.** Let sum = Rs. 250

$$\text{C.I. for 3 year at 20\% pa} = 250 \times \left(\frac{12}{10}\right)^3 - 250 = 182$$

SI for 3 year at 20% pa

$$= \frac{250 \times 3 \times 20}{100} = 150$$

$$\text{Difference} = 182 - 150 = 32 \rightarrow 176$$

$$\Rightarrow \text{Sum} = \frac{176}{32} \times 250 = 1375$$

$$\text{Required Interest} = \frac{1375 \times 2 \times 10}{100} = 275$$

OR

Alternate method

$$\text{Difference} = \frac{P r^2}{100^2} \times \frac{(300+r)}{100}$$

$$176 = \frac{P \times 20^2}{100^2} \times \frac{(300+20)}{100}$$

Therefore,

$$P = 1375$$

$$\text{Required Interest} = \frac{1375 \times 2 \times 10}{100} = 275$$

S443. Ans.(e)

$$\text{Sol. } P \left(\frac{R}{100} \right)^2 = 51.84$$

$$P \times \frac{12}{100} \times \frac{12}{100} = 51.84$$

$$P = \text{Rs } 3600$$

$$\text{Required Amount} = 3600 \left[1 + \frac{10}{100} \right]^2 = 3600 \times 1.1 \times 1.1 = 4356$$

S444. Ans.(a)

$$\text{Sol. SI} = \frac{15000 \times 18 \times 3}{100} = 8100$$

$$\text{CI} = 18000 \left[1 + \frac{15}{100} \right]^2 - 18000 = 5805$$

$$\text{Difference} = 8100 - 5805 = \text{Rs. } 2295$$

S445. Ans.(a)

ATQ,

$$\text{Sol. } \Rightarrow 12000 \times \left[1 + \frac{10}{100} \right] \left[1 + \frac{25}{200} \right] \left[1 + \frac{1}{3} \times \frac{20}{100} \right] - 12000 = 3840$$

S446. Ans.(d)

Sol. Let total savings be x.

$$\text{Saving invested in S.I} = \frac{3}{4} x$$

$$\text{Savings invested in CI} = \frac{1}{4} x \times \frac{1}{2} = \frac{1}{8} x$$

$$\text{remaining savings kept invested} = \frac{x}{8} = 1500$$

$$\Rightarrow x = 12000$$

total money he had after 2yrs

$$= \frac{\frac{3}{4} \times 12000 \times \frac{50}{3} \times 2}{100} + \frac{3}{4} \times 12000 + \frac{1}{8} \times 12000 \left(1 + \frac{8}{100} \right)^2 + 1500$$

(uninvested saving)

$$= 3000 + 9000 + 1749.6 + 1500$$

$$= \text{Rs. } 15249.6$$

S447. Ans.(b)

Sol. Total interest obtained is $56\frac{1}{4}\%$ so total amount after two years will be

$$\left(100\% + 56\frac{1}{4}\% \right) (P + 3000) = (P + 3000) \left(1 + \frac{(R+2)}{100} \right)^2$$

$$\frac{625}{4 \times 100} = \left(1 + \frac{(R+2)}{100} \right)^2$$

$$\frac{25}{2 \times 10} = 1 + \frac{(R+2)}{100}$$

$$R = 23\%$$

S448. Ans.(d)

Sol. First year Interest = $12000 \times \frac{20}{100}$

= 2400 Rs.

For second year —

$$(12000 + 2400 + x) \times \frac{120}{100} = 20400$$

$$6x = 102000 - (72000 + 14400)$$

$$x = \frac{15600}{6}$$

x = 2600 Rs.

S449. Ans.(b)

Sol. Overall rate for 2 years in scheme 'A' = $2 \times 20 = 40\%$

Overall rate for 2 years in scheme 'B' = $10 + 10 + \frac{10 \times 10}{100} = 21\%$

ATQ,

$$\frac{40X}{100} + \frac{21 \times 1.5X}{100} = 572$$

$$40X + 31.5X = 57200$$

$$\Rightarrow X = \frac{57200}{71.5} = 800$$

Interest earned from scheme 'B' = $1.5 \times 800 \times \frac{21}{100} = 252$

S450. Ans.(e)

Sol. In this question we have two variables but only one equation, which we cannot be solved, so answer of this question is cannot be determined.

S451. Ans.(a)

Sol. ATQ —

$$\frac{x(x-1)}{(x+5) \times (x+4)} = \frac{1}{6}$$

$$6x^2 - 6x = x^2 + 4x + 5x + 20$$

$$5x^2 - 15x - 20 = 0$$

$$5x^2 - 20x + 5x - 20 = 0$$

$$5x(x-4) + 5(x-4) = 0$$

x = 4

S452. Ans.(e)

Sol. Required probability = $\frac{{}^{16}C_3 + {}^{12}C_3}{{}^{38}C_3} = \frac{65}{703}$

S453. Ans.(d)

Sol. Distance covered in 1.5 hours (A to C) = $1.5 \times 40 = 60$ km

$\ell + b = 60$ km

$\ell - b = 40$ km

$\ell = 50$ km, $b = 10$ km

parameter of rectangular path is $2(50 + 10) \Rightarrow 120$ km

S454. Ans.(d)

Sol. Radius of circle of circumference 176 cm = $176 \times \frac{7}{2 \times 22} = 28 \text{ cm}$

Radius of circle of circumference 220 cm = $220 \times \frac{7}{2 \times 22} = 35 \text{ cm}$

Side of that square = $(28 + 35 - 36) = 27 \text{ cm}$

Area of that square = 729 cm^2

S455. Ans.(a)

Sol. Let length and breadth of rectangle be $7x \text{ cm}$ and $4x \text{ cm}$ respectively

ATQ

$$49x^2 - 28x^2 = 336$$

$$x = 4$$

sides of square = 28 cm

perimeter = 112 cm

S456. Ans.(a)

Sol. Let length of rectangle and side of square is $8x$ and $9x$ respectively

ATQ—

$$4 \times 9x - 2(8x + 10) = 20$$

$$36x - 16x = 40$$

$$x = 2 \text{ cm}$$

$$\text{Required difference} = (18)^2 - (16 \times 10)$$

$$= 324 - 160$$

$$= 164 \text{ cm}^2$$

**S457. Ans.(b)**

Sol. ATQ —

$$\frac{a}{a+5} = \frac{3}{8}$$

$$5a = 15$$

$$a = 3$$

$$\text{Required probability} = \frac{3}{28} + \frac{10}{28}$$

$$= \frac{13}{28}$$

S458. Ans.(e)

Sol. Let length & breadth of rectangle be $\ell \text{ cm}$ and $b \text{ cm}$ respectively.

& side of square be $a \text{ cm}$.

ATQ,

$$\frac{\ell b}{a^2} = \frac{1}{4} \dots \text{(i)}$$

$$\frac{2(\ell + b)}{4a} = \frac{1}{2}$$

$$\ell + b = a \dots \text{(ii)}$$

From (i) and (ii)

$$4\ell b = (\ell + b)^2$$

$$(\ell - b)^2 = 0$$

$$\ell = b$$

$$\therefore \text{area of square} = a^2$$

$$= (2 \times 5)^2 = 100 \text{ cm}^2$$

S459. Ans.(c)

Sol. Let radius of bigger circle be $5x$ cm.

Radius of smaller circle = $4x$ cm

ATQ,

$$\frac{22}{7} \times (5x)^2 - \frac{22}{7} \times (4x)^2 = 2 \times (4x)^2 - 182$$

$$\Rightarrow \frac{22}{7} \times 9x^2 = 32x^2 - 182$$

$$\Rightarrow 198x^2 = 224x^2 - 1274$$

$$\Rightarrow 26x^2 = 1274 \Rightarrow x = 7$$

Radius of bigger circle = 35 cm.

$$\text{Circumference} = 2 \times \frac{22}{7} \times 35 = 220 \text{ cm.}$$

S460. Ans.(d)

Sol. When Rahul gives a test either he fails or pass.

$$\text{So Probability} = \frac{1}{2}$$

S461. Ans.(c)

Sol. $\pi r^2 = 616$

$$\Rightarrow r = 14 \text{ m}$$

$$\text{Perimeter of rectangle} = \text{Perimeter of circle} = 2\pi r = 2 \times \frac{22}{7} \times 14 = 88$$

And,

$$2(\ell + b) = 88$$

$$(1.2b + b) = 44$$

$$2.2b = 44$$

$$b = 20$$

$$\ell = 24$$

$$\text{Diagonal} = \sqrt{20^2 + 24^2} = \sqrt{976} = 4\sqrt{61} \text{ m}$$

S462. Ans.(a)

Sol. Let the length of smaller be x cm

\therefore length of larger be $(x + 2)$ cm

ATQ,

$$(x + 2)^2 - x^2 = 32$$

$$x^2 + 4x + 4 - x^2 = 32$$

$$4x = 28$$

$$x = 7 \text{ cm}$$

\therefore length of greater line segment = 9 cm.

S463. Ans.(a)**Sol.** Blue and Red or Red and Blue

$$= \left(\frac{10}{25}\right) \times \left(\frac{15}{24}\right) + \left(\frac{15}{25}\right) \times \left(\frac{10}{24}\right) = \left(\frac{1}{2}\right)$$

S464. Ans.(c)**Sol.** No. of ways = 8^5 **S465. Ans.(b)****Sol.** Volume of cylinder = Volume of 'x' cubes

$$\frac{22}{7} \times 14 \times 14 \times 196 = x \times 7^3$$

$$\Rightarrow x = 352$$

S466. Ans.(b)**Sol.** Total numbers of ways $\rightarrow 7!$ Favorable numbers of ways $\rightarrow 5! \times 3!$

$$\text{Probability} \rightarrow \frac{5! \times 3!}{7!} = \frac{1}{7}$$

S467. Ans.(d)**Sol.** Let radius of sphere and cylinder is 'r'.

$$\text{So, volume of sphere} = \frac{4}{3}\pi r^3$$

Volume of cylinder = Volume of sphere

$$\frac{4}{3}\pi r^3 = \pi r^2 h$$

$$h = \frac{4}{3}r$$

$$\text{TSA of sphere} = 4\pi r^2$$

$$\text{TSA of cylinder} = 2\pi r (r + h)$$

$$= 2\pi r \left(r + \frac{4}{3}r\right)$$

$$= \frac{14}{3}\pi r^2$$

$$\text{Required ratio} = \frac{4\pi r^2}{\frac{14}{3}\pi r^2} = \frac{6}{7}$$

$$= 6 : 7$$

S468. Ans.(a)**Sol.** The total number of ways in which they can check in = $4 \times 4 \times 4 = 64$ ways.

Out of this there will be 4 ways in which all of them will check into the same hotel.

Number of ways all of them do not check into the same hotel = $64 - 4 = 60$ ways

$$\text{Required probability} = \frac{60}{64} = \frac{15}{16}$$



S469. Ans.(a)**Sol.** For both letters to be vowels.Possible cases = ${}^5C_2 = 10$ ways.Total cases = ${}^{26}C_2 =$

$$= 26 \times \frac{25}{2}$$

$$= 13 \times 25$$

$$= 325 \text{ ways.}$$

$$\text{Required probability} = \frac{10}{325} = \frac{2}{65}$$

S470. Ans.(b)**Sol.** $\bar{1} \quad \bar{3} \quad \bar{5}$

$$\text{Required ways} = \frac{{}^3P_3}{2!} \times \frac{3!}{2!}$$

$$= 9$$

S471. Ans.(a)**Sol.** Message received by Rahul

$$= X \times 0.8 \times 0.75 \times \frac{4}{9} = 24$$

$$\Rightarrow X = 24 \times \frac{9}{4} \times \frac{100}{75} \times \frac{100}{80}$$

$$= 90$$

$$\text{Quantity I: } 1.5X = 1.5 \times 90 = 135$$

$$\text{Quantity II: } X + 35 = 90 + 35 = 125$$

$$\text{Quantity I} > \text{Quantity II}$$

**S472. Ans.(b)****Sol.** Perimeter of square = $4a = 4 \times 16 = 64$ cm

$$\text{Length of rectangle} = \frac{16 \times 16}{8} = 32$$

$$\text{Perimeter of rectangle} = 2(8 + 32) = 80 \text{ cm}$$

$$\text{Perimeter of rectangle} > \text{Perimeter of square}$$

$$\text{Quantity II} > \text{Quantity I}$$

S473. Ans.(b)**Sol.** Let length of train 'A' = 'x' m.

and speed of train 'A' = '2a' m/sec

$$2a = \frac{x}{20} \text{ and } 2a = \frac{x+60}{25}$$

$$\Rightarrow \frac{x}{20} = \frac{x+60}{25}$$

$$\Rightarrow 25x = 20x + 1200$$

$$\Rightarrow x = \frac{1200}{5} = 240 \text{ m.}$$

$$\text{Speed of train 'A'} = \frac{240}{20} = 12 \text{ m/sec}$$

$$\text{Speed of train 'B'} = \frac{12}{2} \times 3 = 18 \text{ m/sec}$$

Let length of train 'B' = y m

ATQ,

$$12 + 18 = \frac{y+240}{15}$$

$$\Rightarrow 450 - 240 = y$$

$$\Rightarrow y = 210 \text{ m}$$

Quantity II > Quantity I

S474. Ans.(a)

Sol. Let there are total $7x$ balls in box,

then number of green balls = $3x$

and number of yellow balls = $4x$

So, number of yellow balls will always be more than number of green balls

Yellow balls > Green balls

Quantity I > Quantity II

S475. Ans.(e)

Sol. Quantity I

Let upstream speed = x

Downstream speed = $11x$

$$\text{Speed of boat} = \frac{1}{2}(x + 11x) = 30$$

$$\Rightarrow x = \frac{30 \times 2}{12} = 5$$

\Rightarrow upstream speed = 5 km/hr

Distance travelled in 10.8 hours in upstream = $5 \times 10.8 = 54$ km

Quantity II

Let speed of stream = y km/hr.

ATQ,

$$\frac{x-18}{15-y} = \frac{x}{15+y} \dots (i)$$

Also,

$$15 + y - (15 - y) = 6$$

$$2y = 6$$

$$y = 3 \dots (ii)$$

From (i) and (ii)

$$\frac{x-18}{12} = \frac{x}{18}$$

$$x = 54 \text{ km}$$

Quantity I = Quantity II



S476. Ans.(a)**Sol.** Ratio of Investment of Ram and Shyam

$$= 10 \times 12 : 9 \times 8$$

$$= 5 : 3$$

Quantity I:

$$\text{Share of profit of Ram} = \frac{5}{8} \times 11400$$

$$= 1425 \times 5 = \text{Rs. } 7125$$

Quantity II:

Rs 1420

So,

Quantity I > Quantity II**S477. Ans.(b)****Sol. Quantity I:**

$$\text{Time take by 12men } 24 \times \frac{20}{12} = 40 \text{ days}$$

Quantity II:

$$\text{Time have by 16 women} = \frac{36 \times 24}{16} = 54 \text{ days}$$

Quantity by II > Quantity I**S478. Ans.(e)****Sol.** Sum of age of all = 37×3

$$= 46 \text{ years}$$

Quantity II:

$$\text{Sum of C} = (111-46) \text{ Years} = 65 \text{ years}$$

Quantity II = Quantity I**S479. Ans.(b)****Sol. Quantity I:**

$$\text{Time taken to cross the pale} = \frac{360}{54 \times \frac{5}{18}} \text{ sec} = 24 \text{ sec}$$

Quantity II:

$$\text{Increased speed} = \frac{7}{6} \times 54$$

$$= 63 \text{ km/hr}$$

$$\text{Required time} = 360 + \frac{130}{63 \times \frac{5}{18}}$$

$$= \frac{490}{7 \times \frac{5}{2}}$$

$$= \frac{70 \times 2}{5}$$

$$= 28 \text{ sec}$$

Quantity II > Quantity I

S480. Ans.(a)**Sol. Quantity I:**

$$\frac{4}{3} \times \pi \times 6.7 \times 6.7 \times 6.7 = \frac{1}{3} \times \pi \times r^2 \times 26.8$$

$$\Rightarrow r = 6.7 \text{ cm}$$

Quantity II: 5.95 cm

Quantity I > Quantity II

S481. Ans.(e)**Sol.** Let the age of Abhi, Billi and Chauhan is A, B and C years respectively.

From (i)

$$C : B \text{ is } 3 : 2$$

From (ii)

$$\frac{A-6}{B+2} = \frac{1}{2} \Rightarrow 2A - B = 14$$

Hence age of Chauhan can't be calculated from both statements.

S482. Ans.(b)**Sol.** Nothing can be said from Ist statements as time is not given.

From (ii)

Rs. 76 is obtained in 19 years, which means Rs. 4 per year on Rs. 100.

Hence rate is 4%.

Hence, answer can be calculated only from statement (ii)**S483. Ans.(a)****Sol.** Area of equilateral Δ is $\frac{\sqrt{3}}{4} a^2$ where a is side of equilateral triangle.From (i) height of equilateral triangle is $\frac{\sqrt{3}}{2} a$

$$\therefore \frac{\sqrt{3}}{2} a = 3\sqrt{3} \text{ cm}$$

$$\Rightarrow a = 6 \text{ cm.}$$

$$= \frac{\sqrt{3}}{4} \times 36 \Rightarrow 9\sqrt{3} \text{ cm}^2$$

Nothing can be said from statement II.

Answer can be calculated only from statement (i)

S484. Ans.(c)**Sol.** Let Veer's present age = x

$$\Rightarrow \text{Atul's present age} = x - 10$$

From A \rightarrow

$$\text{Abhi's present age} = x - 15$$

ATQ,

$$(x - 5) = \frac{120}{100} (x - 10)$$

$$5x - 25 = 6x - 60$$

$$x = 35$$

So, Veer's present age = 35 years

From B →

$$\frac{x}{x-10} = \frac{7}{5}$$

$$\Rightarrow 5x = 7x - 70$$

$$\Rightarrow x = 35$$

So, Veer's present age = 35 years.

Either statement **A** or statement **B** by itself is sufficient to answer the question.

S485. Ans.(a)

Sol. Let speed of boat in still water = a

Speed of stream = b

From A)

$$a = \frac{150}{100}(a - b)$$

$$\Rightarrow 100a = 150a - 150b$$

$$\Rightarrow a = 3b$$

From B)

$$2 = \frac{32}{a-b} - \frac{32}{a+b}$$

$$\Rightarrow (a^2 - b^2) = 32b$$

From (A) and (B) together

$$9b^2 - b^2 = 32b$$

$$\Rightarrow 8b^2 = 32b$$

$$\Rightarrow 8b(b - 4) = 0$$

$$\Rightarrow b = 0, 4$$

$$\Rightarrow a = 12$$

Speed of boat in downstream = a + b

$$= 12 + 4$$

$$= 16 \text{ km/hr}$$

Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.

S486. Ans.(a)

Sol. We know—

$$\text{Difference for two year (D)} = \frac{PR^2}{100^2}$$

$$125 = \frac{500 \times R^2}{100^2}$$

$$\therefore R = 50\%$$

Quantity I:

$$SI = \frac{P \times R \times t}{100}$$

$$= \frac{500 \times 50 \times 3}{100} = \text{Rs. } 750$$

∴ Quantity I > Quantity II



S487. Ans.(b)**Sol.** Speed of train A in m/sec.

$$= 72 \times \frac{5}{18}$$

$$= 20 \text{ m/sec}$$

Let length of train A be x m \therefore length of platform = $2x$ m

ATQ,

$$\frac{x+2x}{12} = 20$$

$$\therefore x = 80 \text{ m}$$

Quantity I:

$$30\% \text{ of length} = \frac{30}{100} [80 + 160] = 72 \text{ m}$$

Quantity II:Let length of train B be y m

ATQ,

$$\frac{80+y}{30} = 10$$

$$y = 220 \text{ m}$$

Quantity II > Quantity I

S488. Ans.(b)**Sol.** Quantity I:

$$\text{Required ways} = 5 \times 6 \times 6 \times 6 = 1080$$

Quantity II:

$$\text{Required ways} = \frac{8!}{2!} - 7!$$

$$= 20,160 - 5040$$

$$= 15120$$

Quantity II > Quantity I

S489. Ans.(a)**Quantity I –**Let speed of train be $5x$ and $7x$ respectively

$$(7x - 5x) = \frac{120+160}{28}$$

$$2x = 10$$

$$x = 5$$

$$\text{Speed of faster train} = 5 \times 7 \times \frac{18}{5} = 126 \text{ km/hr}$$

Quantity II –Let speed of car be x km/hr

$$\frac{630}{x} - \left(\frac{210}{x} + \frac{420 \times 4}{5x} \right) = \frac{4}{3}$$

$$\frac{3150 - 2730}{5x} = \frac{4}{3}$$

$$20x = 1260$$

$$x = 63 \text{ km/hr}$$

Quantity I > Quantity II



S490. Ans.(e)**Sol.** Quantity I. $12x^2 - 61x + 77 = 0$

$$\Rightarrow 12x^2 - 28x - 33x + 77 = 0$$

$$\Rightarrow 4x(3x-7) - 11(3x-7) = 0$$

$$\Rightarrow x = 11/4 \text{ or } 7/3$$

Quantity II. $20x^2 - 91x + 99 = 0$

$$\Rightarrow 20x^2 - 36x - 55x + 99 = 0$$

$$\Rightarrow 4x(5x-9) - 11(5x-9) = 0$$

$$x = 11/4 \text{ or } \frac{9}{5}$$

No relation.

S491. Ans.(a)**Sol.** Quantity I. Let the five consecutive odd numbers be $x - 4, x - 2, x, x + 2$ and $x + 4$

$$\Rightarrow x - 4 + x - 2 + x + x + 2 + x + 4 = 23 \times 5$$

$$\Rightarrow x = 23$$

$$\text{Required difference} = (27)^2 - (19)^2 = 368$$

Quantity II.

$$X = 495 + 64 \times \frac{950}{100} - 738 = 365$$

Quantity I. > Quantity II.

S492. Ans.(c)**Sol.** $10x^2 - 9x + 2 = 0$

$$\Rightarrow 10x^2 - 5x - 4x + 2 = 0$$

$$\Rightarrow 5x(2x-1) - 2(2x-1) = 0$$

$$\Rightarrow (5x-2)(2x-1) = 0$$

$$\Rightarrow x = \frac{2}{5} \text{ or } \frac{1}{2}$$

Quantity II.

$$15x^2 - 11x + 2 = 0$$

$$\Rightarrow 15x^2 - 5x - 6x + 2 = 0$$

$$\Rightarrow 5x(3x-1) - 2(3x-1) = 0$$

$$\Rightarrow x = 1/3 \text{ or } 2/5$$

Quantity I \geq Quantity II.**S493. Ans.(e)****Sol. From I -**

Let capital of Mr. Jindal = P lacs

And, capital of Mr. Ravi = (20 - P) lacs

From II -

Let time period of investment for Mr. Jindal and his partner Mr. Ravi be 4t and 5t months respectively. then,

$$\frac{P \times 4t}{(20,00,000 - P) \times 5t} = \frac{12}{25}$$

$$8P = 60 \text{ lacs}$$

$$P = 7.5 \text{ lacs}$$

Since their time period of investment is given in the ratio, so we can't determine the required value.



S494. Ans.(c)**Sol.** Total balls in bag = $6 + a + b$ **From I -**

$$\frac{a}{6+a+b} = \frac{4}{15}$$

$$11a - 4b = 24$$

From II -

$$\frac{b}{6+a+b} = \frac{1}{3}$$

$$2b - a = 6$$

From I & II together we get

$$a = 4$$

$$b = 5$$

required difference = 1

So, statement I and II both together sufficient

S495. Ans.(c)**Sol.** Let Speed of boat in still water = a and Speed of stream = b

From I →

$$\frac{40}{a-b} = \frac{80}{a+b}$$

$$a + b = 2a - 2b$$

$$a = 3b$$

From II →

$$\frac{60}{a-b} = 3.75 + \frac{60}{a+b}$$

$$60 \left[\frac{1}{a-b} - \frac{1}{a+b} \right] = 3.75$$

$$\frac{2b}{a^2-b^2} = \frac{1}{16}$$

$$32b = a^2 - b^2$$

From I and II together →

$$32b = 9b^2 - b^2$$

$$\Rightarrow b = 4$$

$$\Rightarrow a = 12$$

$$\text{Required time} = \frac{120}{a-b} + \frac{120}{a+b} = 120 \left[\frac{2a}{a^2-b^2} \right] = 120 \times \frac{6b}{32b} = 22.5 \text{ hours}$$

Hence, Both the statements are necessary to answer the question.

S496. Ans.(d)**Sol.** Let speed of two trains be $4x$ m/s & $5x$ m/s respectively**From I -**

$$\frac{(120+160)}{9x} = \frac{56}{9}$$

$$x = 5$$

$$\text{Required difference} = (5 \times 5) \times \frac{18}{5} - (5 \times 4) \times \frac{18}{5} = 90 - 72 = 18 \text{ km/hr}$$



From II -

$$\frac{120}{5x + \frac{5}{2}} = \frac{240}{55}$$

$$x = 5 \text{ m/s}$$

$$\text{Required difference} = (5 \times 5) \times \frac{18}{5} - (5 \times 4) \times \frac{18}{5} = 90 - 72 = 18 \text{ km/hr}$$

So, either from statement I or statement II we can determine the answer

S497. Ans.(c)

Sol. Form I -

Selling price of article = 7600 Rs.

$$\text{Marked price of article} = \frac{7600}{95} \times 100$$

$$= 8000 \text{ Rs.}$$

From II -

$$\text{Cost price} = \frac{8000}{125 \times 100}$$

$$= \text{Rs } 6400$$

From I & II -

$$\text{Profit of shopkeeper} = 7600 - 6400 = 1200 \text{ Rs.}$$

So, statement I and statement II together required to answer the question

S498. Ans.(d)

Sol. From Statement I & II

$$\text{Total salary of officers} = \frac{100}{5} \times 20000 = \text{Rs } 400000$$

$$\text{Total salary of all employees} = 40 \times 25000 = \text{Rs } 1000000$$

$$\text{Total salary of clerks} = 1000000 - 400000 = \text{Rs } 600000$$

$$\text{Number of clerks} = \frac{600000}{20000} = 30$$

$$\text{Number of officers} = 40 - 30 = 10$$

$$\text{Each officer salary} = \frac{400000}{10} = \text{Rs } 40000$$

Clearly, both statements together are necessary to answer

S499. Ans.(b)

Sol. From Statement I

$$\text{Time taken by each woman} = 4 \times 4 = 16 \text{ days}$$

$$\text{Time taken by each man} = \frac{16}{3} \times 2 = \frac{32}{3} \text{ days}$$

$$1 \text{ day work of 5 men} = \frac{5}{32} \times 3 = \frac{15}{32} \text{ units}$$

$$\text{Required time} = \frac{32}{15} = 2 \frac{2}{15} \text{ days}$$

Clearly, only statement I is sufficient to answer

S500. Ans.(a)

Sol. From Statement I

Amount invested is not given also no interest amount is given

From Statement II

Let rate of interest be R%

$$\text{ATQ, } 4000 + 840 = 4000 \left(1 + \frac{R}{100}\right)^2$$

$$\frac{121}{100} = \left(1 + \frac{R}{100}\right)^2$$

$$R = 10\%$$

Clearly, only statement II is sufficient to answer.

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