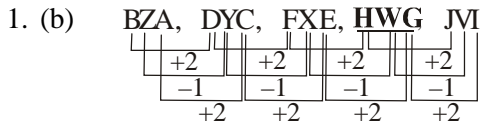


RRB NTPC - PRACTICE SET

Answers with Explanation



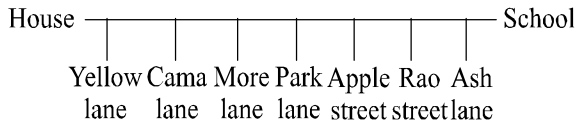
2. (c)

3. (a)

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4. (b)

Sol : (5-6)



5. (b)

6. (c)

7. (b) $4 - 4 \rightarrow 4 \times 4 + 1 = 17$

$6 - 6 \rightarrow 6 \times 6 + 1 = 37$

$2 - 2 \rightarrow 2 \times 2 + 1 = 5$

$5 - 5 \rightarrow 5 \times 5 + 1 = 26$

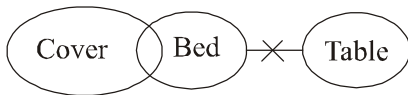
8. (c) $(16 - 12) + 1 = 5$

9. (d) $3^2 + 3 = 12$

$12^2 + 3 = 147$

$147^2 + 3 = 21612$

10. (a)



11. (b)

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12. (a)

13. (a)

14. (c) $GM = 7 \times 13 = 91 \Rightarrow 9 \times 1 = 9$

$KT = 11 \times 20 = 220 \Rightarrow 2 \times 2 \times 0 = 0$

$PS = 16 \times 19 = 304 \Rightarrow 3 \times 0 \times 4 = 0$

$UY = 21 \times 25 = 525 \Rightarrow 5 \times 2 \times 5 = 50$

So, $DI = 4 \times 9 = 36 \Rightarrow 3 \times 6 = 18$

$CP = 3 \times 16 = 48 \Rightarrow 4 \times 8 = 32$

15. (b)

16. (b)

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17. (d)

Solutions (18-19) :

Person	P	Q	R	S	T
Place	Hyderabad	Kolkata	Bangalore	Chennai	Delhi
Mode	Bus	Aeroplane	Car	Boat	Train

18. (c)

19. (b)

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20. (b)

21. (b) $6 \times 4 + 2 = 16$

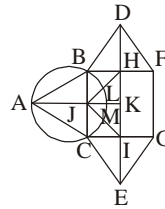
$\Rightarrow 4 + 6 \times 2 = 16$

$\Rightarrow 4 + 12 = 16$

22. (b)

23. (b)

24. (c)



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The triangles are – ABJ, ACJ, BDH, DHF, CIE, GIE, ABC, BDF, CEG, BHJ, JHK, JKI, CJi and JHI.

Thus, there are 14 triangles in the given figure.

25. (a)

26. (c)

27. (b)

28. (a)

29. (c) $26 - 1 = 25$

$25 - 2 = 23$

$23 - 3 = 20$

$20 - 4 = 16$

$16 - 5 = 11$

$11 - 6 = \boxed{5}$

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30. (a)

31. (b)

32. (a) Required time = LCM of 252, 308 and 198 seconds.

$$\text{Now, } 252 = 2 \times 2 \times 3 \times 3 \times 7$$

$$308 = 2 \times 2 \times 7 \times 11$$

$$198 = 2 \times 3 \times 3 \times 11$$

$$\therefore \text{LCM} = 2 \times 2 \times 3 \times 3 \times 7 \times 11$$

$$= 36 \times 77 \text{ seconds}$$

$$= \frac{36 \times 77}{60} \text{ minutes}$$

$$= \frac{231}{5} = 46 \text{ minutes } 12 \text{ seconds}$$

33. (c) Total expenditure of the year
 $= ₹ (3 \times 2200 + 4 \times 2550 + 5 \times 3120)$
 $= ₹ (6600 + 10200 + 15600) = ₹ 32400$
 \therefore Total income of the year
 $= ₹ (32400 + 1260) = ₹ 33660$
 \therefore Average monthly income
 $= ₹ \frac{33660}{12} = ₹ 2805$

34. (a) $\frac{2a+3b}{2a-3b} = \frac{2c+3d}{2c-3d}$ ACHIEVERS In Focus

$$\text{or, } 4ac - 6ad + 6bc - 9bd = 4ac + 6ad - 6bc - 9bd$$

$$\text{or, } 12bc = 12ad$$

$$\text{or, } \frac{a}{b} = \frac{c}{d}$$

35. (b) $1 \div [1 + 1 \div \{1 + 1 \div (1 + 1 \div 2)\}]$

$$= 1 \div \left[1 + 1 \div \left\{ 1 + 1 \div \left(1 + \frac{1}{2} \right) \right\} \right]$$

$$= 1 \div \left[1 + 1 \div \left\{ 1 + 1 \div \frac{3}{2} \right\} \right]$$

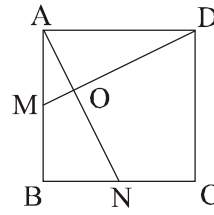
$$= 1 \div \left[1 + 1 \div \left\{ 1 + \frac{2}{3} \right\} \right]$$

$$= 1 \div \left[1 + 1 \div \frac{5}{3} \right] = 1 \div \left[1 + \frac{3}{5} \right] = 1 \div \frac{8}{5} = \frac{5}{8}$$

36. (b)

37. (b) ACHIEVERS In Focus

38. (b)



If $AB = 2x$, then $BN = x$

$$\therefore AN = \sqrt{4x^2 + x^2} = \sqrt{5}x$$

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Similarly,

$$MD = \sqrt{4x^2 + x^2} = \sqrt{5}x$$

39. (a)

40. (a)

41. (d) After 10 years.

$$SI = \frac{1000 \times 5 \times 10}{100} = ₹ 500$$

Principal for 11th year and next

$$= 1000 + 500 = ₹ 1500$$

Remaining SI = ₹ $(2000 - 1500) = ₹ 500$

$$\therefore T = \frac{SI \times 100}{P \times R} = \frac{500 \times 100}{1500 \times 5}$$

$$= \frac{20}{3} \text{ years} = 6\frac{2}{3} \text{ years}$$

$$\therefore \text{Total time} = 10 + 6\frac{2}{3} = 16\frac{2}{3} \text{ years}$$

42. (c)

43. (a) Water in 40 L of mixture

$$= 40 \times \frac{10}{100} = 4L$$

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Let water to be added to it is x litres.

$$\therefore \text{Percentage of water} = \left[\frac{(4+x)}{(40+x)} \times 100 \right] \%$$

$$\therefore \frac{4+x}{40+x} \times 100 = 20$$

$$\Rightarrow \frac{4+x}{40+x} = \frac{1}{5}$$

$$\Rightarrow 5(4+x) = 40+x$$

$$\Rightarrow 4x = 20 \quad \therefore x = \frac{20}{4} = 5L$$

44. (a)

45. (b) List price = Rs 1500

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Price after 20% discount = 80% of Rs 1500

$$= \text{Rs} \left(\frac{80}{100} \times 1500 \right) = \text{Rs} 1200$$

Additional discount

$$= \left(\frac{120}{1200} \times 100 \right) \% = 10\%$$

46. (c)

47. (c) Let the original price be ₹ x.

$$\text{CP} = \frac{80}{100} \times x = ₹ \frac{4x}{5}$$

$$\text{SP} = \frac{4x}{5} \times \frac{140}{100} = ₹ \frac{28x}{25}$$

$$\text{Gain on original price} = \frac{28x}{25} - x = \frac{3x}{25}$$

$$\therefore \text{Gain \%} = \frac{3x}{25 \times x} \times 100 = 12\%$$

48. (c)

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49. (d) Let the usual speed be x km/hr

$$\frac{42}{\left(\frac{5}{7}x\right)} = \frac{126}{75} \Rightarrow \frac{42 \times 7}{5x} = \frac{42}{25}$$

$$\Rightarrow x = 35$$

 \therefore Usual speed = 35 km/hr.

50. (c)

51. (b)

	Hound	Hare
leap frequency	5	6
leap length	4	5

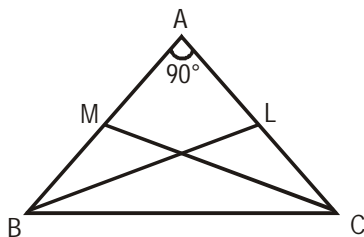
 \therefore Speed of hound : Speed of hare = 25 : 24

52. (b)

53. (a)

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54. (a)

From $\triangle ABC$,

$$AB^2 + AC^2 = 25 \dots(i)$$

From $\triangle ABL$

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$$AB^2 + AL^2 = \left(\frac{3\sqrt{5}}{2} \right)^2$$

$$\Rightarrow AB^2 + \frac{AC^2}{4} = \frac{45}{4}$$

$$\Rightarrow 4AB^2 + AC^2 = 45$$

$$\Rightarrow 3AB^2 + 25 = 45$$

$$\Rightarrow AB^2 = \frac{20}{3}$$

$$\therefore AC^2 = 45 - \frac{4 \times 20}{3}$$

$$= \frac{135 - 80}{3} = \frac{55}{3}$$

$$\therefore \text{CM} = \sqrt{AC^2 + AM^2}$$

$$= \sqrt{AC^2 + \frac{AB^2}{4}}$$

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$$= \sqrt{\frac{55}{3} + \frac{1}{4} \times \frac{20}{3}}$$

$$= \sqrt{\frac{60}{3}} = \sqrt{20} = 2\sqrt{5} \text{ cm.}$$

55. (b) Let the speed of water and that of rowing in still water be x & y respectively

Downstream speed = x + y km/hr.

Speed upstream = y - x km./hr.

A.T.Q.

$$\frac{2D}{x+y} = \frac{D}{y-x}$$

$$\Rightarrow \frac{x}{y} = \frac{1}{3}$$

56. (b) $7 \sin^2 \theta + 3 \cos^2 \theta = 4$

$$\Rightarrow 7 \frac{\sin^2 \theta}{\cos^2 \theta} + 3 = \frac{4}{\cos^2 \theta} = 4 \sec^2 \theta$$

$$\Rightarrow 7 \tan^2 \theta + 3 = 4(1 + \tan^2 \theta)$$

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$$\Rightarrow 7 \tan^2 \theta - 4 \tan^2 \theta = 4 - 3$$

$$\Rightarrow 3 \tan^2 \theta = 1$$

$$\Rightarrow \tan^2 \theta = \frac{1}{3}$$

$$\Rightarrow \tan \theta = \frac{1}{\sqrt{3}}$$

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57. (b)

$$999 \frac{995}{999} \times 999 = \left(999 + \frac{995}{999} \right) 999$$

$$= 999 \times 999 + \frac{995}{999} \times 999$$

$$= (1000 - 1) 999 + 995$$

$$= 999000 - 999 + 995$$

$$= 999000 - 4 = 998996$$

58. (d) 59. (d) 60. (a)

61. (a) 62. (d) 63. (c) 64. (c) 65. (b)

66. (c) 67. (c) 68. (c) 69. (d) 70. (b)

71. (a) 72. (a) 73. (a) 74. (c) 75. (d)

76. (b) 77. (a) 78. (b) 79. (a) 80. (b)

81. (d) 82. (a) 83. (a) 84. (a) 85. (c)

86. (d) 87. (a) 88. (a) 89. (c) 90. (a)

91. (b) 92. (d) 93. (c) 94. (a) 95. (d)

96. (b) 97. (d) 98. (b) 99. (b) 100. (b)

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