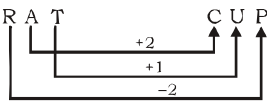
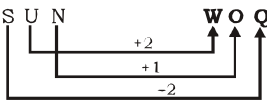
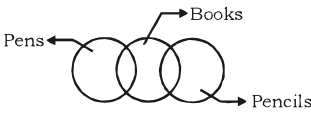


ANSWER SET - 52

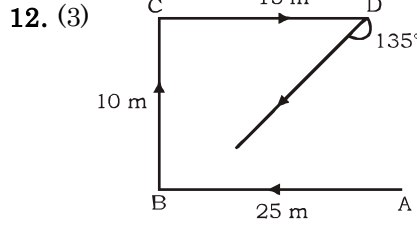
1. (2) 2. (2) 3. (3) 4. (3) 5. (4)
6. (3) 7. (2) 8. (4) 9. (3) 10. (3)
11. (1) 12. (3) 13. (3) 14. (3) 15. (2)
16. (3) 17. (2) 18. (3) 19. (3) 20. (3)
21. (3) 22. (3) 23. (3) 24. (2) 25. (2)
26. (3) 27. (1) 28. (1) 29. (3) 30. (1)
31. (2) 32. (4) 33. (4) 34. (3) 35. (2)
36. (4) 37. (3) 38. (2) 39. (1) 40. (3)
41. (3) 42. (1) 43. (1) 44. (1) 45. (4)
46. (1) 47. (1) 48. (3) 49. (1) 50. (3)
51. (2) 52. (2) 53. (3) 54. (4) 55. (2)
56. (1) 57. (1) 58. (3) 59. (4) 60. (2)
61. (3) 62. (2) 63. (4) 64. (1) 65. (1)
66. (1) 67. (1) 68. (1) 69. (4) 70. (3)
71. (1) 72. (3) 73. (4) 74. (1) 75. (2)
76. (3) 77. (2) 78. (4) 79. (2) 80. (1)
81. (1) 82. (1) 83. (1) 84. (1) 85. (3)
86. (2) 87. (3) 88. (2) 89. (4) 90. (3)
91. (4) 92. (2) 93. (2) 94. (3) 95. (3)
96. (4) 97. (3) 98. (3) 99. (2) 100. (3)

EXPLANATION - 52

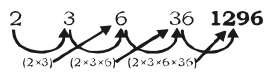
1. (2) Radio was invented by Marconi and Calculator was invented by **Pascal**.
2. (2) $4^2 \times 2 = 32$
 $5^2 \times 2 = 50$
3. (3) As,


Similarly,

4. (3) Only **64** is the number whose square root and cube root can be found.
5. (4) D $\xrightarrow{\text{reverse}}$ W
H $\xrightarrow{\text{reverse}}$ S
L $\xrightarrow{\text{reverse}}$ O
G $\xrightarrow{\text{not a reverse}}$ U
6. (3) Only, **Sky** is the word without vowels.
7. (2) $4 \rightarrow 3 \rightarrow 1 \rightarrow 6 \rightarrow 2 \rightarrow 5$
8. (4)


None of the four follow
9. (3) Hospital consists of Doctor and Patient, but doctor and patient are two different entity.
10. (3) Required Age = $80 + (3 \times 3) = 89$
11. (1) Brother of mother means maternal uncle.
Hence, only nephew of Aamir's maternal uncle means Aamir himself. Therefore, Sonia is the **wife** of Aamir.



Hence, she is going in the South-West direction.

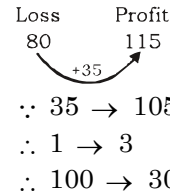
13. (3) In these two positions one of the common face having 1 point is in the same position.
There will be 2 points opposite to the face containing 5 points.
14. (3) $(12 + 5)(12 - 5) = 17 \times 7 = 119$
 $(9 + 6)(9 - 6) = 15 \times 3 = 45$
 $(18 + 3)(18 - 3) = 21 \times 15 = 315$
15. (2) $(2 + 4)^3 = 6^3 = 216$
 $(8 + 7)^2 = 15^2 = 225$
 $(18 + 9)^1 = 27^1 = 27$
 $(7 + 5)^3 = 12^3 = 1728$
16. (3) HCF (12, 48, 16) = 4 $\Rightarrow 4 \times 10 = 40$
HCF (24, 27, 36) = 3 $\Rightarrow 3 \times 10 = 30$
HCF (18, 24, 30) = 6 $\Rightarrow 6 \times 10 = 60$
17. (2) The number of squares in the given figure
 $= (1^2 + 2^2 + 3^2 + 4^2) = 30$
18. (3) There will be 3 dots opposite to 5 dots.
19. (3)

20. (3)

$\frac{1^2+2}{3}$	$\frac{3^2+3}{12}$	$\frac{5^2+4}{29}$	$\frac{7^2+5}{54}$	$\frac{9^2+6}{87}$	$\frac{11^2+7}{128}$
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21. (3)
22. (3)
23. (3)
24. (2)

F R I E N D	L O V E
6 18 9 5 14 4	12 15 22 5
sum	sum
56%	54%
M A R R I A G E	
13 1 18 18 9 1 7 5	
sum	
72%	
A T T I T U D E	
1 20 20 9 20 21 4 5	
sum	
100%	
51. (2) Let the numbers are 50 and 60 respectively.

A	:	B
50	:	60
$\downarrow +20\%$		$\downarrow -20\%$
60	:	48

\therefore Required ratio = $60 : 48 = 5 : 4$
52. (2) Let SP = 100



53. (3) Listed price = ₹ 1400
After 1st discount

$$= \frac{90}{100} \times 1400$$

$$= ₹ 1260$$

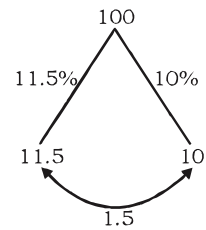
SP = ₹ 1200

Additional discount %

$$= \frac{1260 - 1200}{1260} \times 100$$

$$= \frac{10}{21} \% = 4 \frac{16}{21} \%$$

54. (4) Let the sum = 100 units



According to question,
 $\therefore 1.5 \text{ units} = 75$

$$\therefore 1 \text{ unit} = \frac{75}{1.5}$$

$$\therefore 100 \text{ units} = \frac{75}{1.5} \times 100 = ₹ 5000$$

55. (2) According to the question,
Principal = ₹ S
Rate = $2r\%$ p.a
Time = 3 years

$$\therefore A = P \left(1 + \frac{R}{100} \right)^r$$

$$A = S \left(1 + \frac{2r}{100} \right)^3$$

$$A = S \left(1 + \frac{r}{50} \right)^3$$

56. (1) $A + B + C = 196$

$$A : B : C$$

$$\times 2 \quad \begin{matrix} 2 : 3 & 3 \\ \hline 5 & : & 8 \\ \hline 10 : 15 & : & 24 \end{matrix}$$

$$10x + 15x + 24x = 49x$$

$$49x = 196$$

$$x = 4$$

$$\therefore \text{second number (2)}$$

$$= 4 \times 15$$

$$= 60$$

57. (1) Let their monthly income be ₹ 8x and ₹ 5x

According to the question

$$\frac{8x - 12000}{5x - 10000} = \frac{5}{3}$$

$$\Rightarrow 24x - 36000 = 25x - 50000$$

$$x = 14000$$

Difference in monthly income

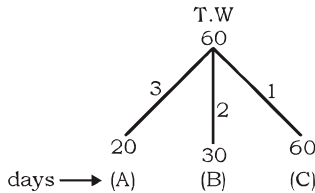
$$8x - 5x = 3x$$

$$x = 14000$$

$$\therefore 3x = 14000 \times 3$$

$$= ₹ 42,000$$

58. (3)



in 3 days cycle total work done is

$$= 3 + 3 + 6 = 12 \text{ units}$$

work will be completed in

$$= \frac{60}{12} = 5 \text{ cycles}$$

$$1 \text{ cycle} \rightarrow 3 \text{ days}$$

$$5 \text{ cycle} \rightarrow 3 \times 5 = 15 \text{ days}$$

59. (4) 1 sec \rightarrow 1 drop

$$\text{No. of second in 300 days}$$

$$(24 \text{ hrs} \times 60 \text{ min} \times 60 \text{ sec}) \times 300$$

days

No. of litres wasted

$$\frac{300 \times 24 \times 60 \times 60}{6 \times 1000} \text{ litres}$$

$$= 4320 \text{ litres}$$

60. (2) Speed = 78 km/hr

$$= \frac{78}{60} \times 1000 \text{ m/min}$$

$$= 1300 \text{ m/min}$$

Distance travelled in 1 min

$$= 1300 \text{ m}$$

$$= 1300 = 1 + 800$$

$$1 = 500 \text{ m}$$

length of tunnel is 500 m

61. (3) Speed of boat in still water, x

$$= 5 \text{ km/hr}$$

Speed of stream, y = 3 km/hr

According to question,

$$\frac{\text{Distance}}{8} + \frac{\text{Distance}}{2} = 3 \text{ hrs}$$

$$\frac{D}{8} + \frac{D}{2} = 3$$

$$\Rightarrow \frac{5D}{8} = 3$$

$$5D = 24$$

$$D = \frac{24}{5} = 4.8 \text{ km}$$

$$62. (2) \frac{1}{5} + 999 \frac{494}{495} \times 99$$

$$= \frac{1}{5} + \left[999 + \frac{494}{495} \right] \times 99$$

$$= \frac{1}{5} + \left(1000 - \frac{1}{495} \right) \times 99$$

$$= \frac{1}{5} + 99000 - \frac{1}{5}$$

$$= 99000$$

63. (4) According to the question,

$$\frac{8}{9} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } 1 \frac{1}{4}}$$

$$= \frac{8}{9} \times \frac{3}{\frac{5}{6} \div \left(\frac{2}{3} \times \frac{5}{4} \right)}$$

$$= \frac{8}{9} \times \frac{3}{\frac{5}{6} \div \frac{5}{6}}$$

$$= \frac{8}{9} \times \frac{3}{1} = \frac{8}{3}$$

64. (1) $9 \sec^2 \theta + 4 \operatorname{cosec}^2 \theta$

$$\left((\sqrt{9}) + (\sqrt{4}) \right)^2$$

$$\left(\because a \sec^2 \theta + b \operatorname{cosec}^2 \theta \right)$$

$$\left(\min = (\sqrt{a} + \sqrt{b})^2 \right)$$

$$= 9 + 4 + 2\sqrt{9 \times 4}$$

$$= 13 + 12$$

$$= 25$$

65. (1) $5 \sin^2 \theta + 2 \cos^2 \theta + \frac{3}{1 + \tan^2 \theta}$

$$\Rightarrow 5 \sin^2 \theta + 2 \cos^2 \theta + \frac{3}{\sec^2 \theta}$$

$$= 5 \sin^2 \theta + 2 \cos^2 \theta + 3 \cos^2 \theta$$

$$= 5 \sin^2 \theta + 5 \cos^2 \theta$$

$$= 5(\sin^2 \theta + \cos^2 \theta)$$

$$= 5 \quad (\because \sin^2 \theta + \cos^2 \theta = 1)$$

66. (1) Given

$$a - b = 6$$

$$b - c = -2$$

$$c - a = -4$$

We know that

$$a^3 + b^3 + c^3 - 3abc = (a + b + c)$$

$$((a - b)^2 + (b - c)^2 + (c - a)^2)$$

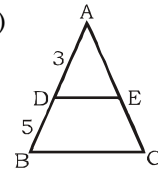
$$\frac{a^3 + b^3 + c^3 - 3abc}{a + b + c}$$

$$= \frac{1}{2} \left((a - b)^2 + (b - c)^2 + (c - a)^2 \right)$$

$$= \frac{1}{2} (6^2 + (-2)^2 + (-4)^2)$$

$$= \frac{1}{2} (36 + 4 + 16) = 28$$

67. (1)



Area of trapezium

$$= \text{Area of } \Delta ABC - \text{Area of } \Delta ADE$$

$$= 64 - 9$$

$$= 55$$

$$\text{So ratio} = 64 : 55$$

68. (1) $x - \frac{1}{x} = \sqrt{12}$

$$\text{so } x + \frac{1}{x} = \sqrt{12 + 4} = 4$$

$$\frac{x^5 + \frac{1}{x}}{x^4 + 1} = \frac{x^2 \left(x^3 + \frac{1}{x^3} \right)}{x^2 \left(x^2 + \frac{1}{x^2} \right)}$$

$$= \frac{x^3 + \frac{1}{x^3}}{x^2 + \frac{1}{x^2}} = \frac{64 - 12}{14} = \frac{52}{14} = \frac{26}{7}$$

69. (4) Number of cones

$$= \frac{\text{Volume of sphere}}{\text{Volume of cone}}$$

$$= \frac{\frac{4}{3} \pi (10.5)^3}{\frac{1}{3} \pi (3.5)^2 \times 3}$$

$$= \frac{4 \times 10.5 \times 10.5 \times 10.5}{3.5 \times 3.5 \times 3} = 126$$

70. (3) $a = 3 + 2\sqrt{3}$

$$ab = 1$$

$$\therefore b = \frac{1}{3 + 2\sqrt{3}} = 3 - 2\sqrt{3} = \frac{1}{a}$$

$$a + b = a + \frac{1}{a} = 6$$

$$\therefore a^2 + \frac{1}{a^2} = 6^2 - 2 = 34$$

$$\therefore \frac{a^2 + 3ab + b^2}{a^2 - 3ab + b^2} = \frac{a^2 + b^2 + 3ab}{a^2 + b^2 - 3ab}$$

$$= \frac{a^2 + \frac{1}{a^2} + 3}{a^2 + \frac{1}{a^2} - 3} = \frac{34 + 3}{34 - 3} = \frac{37}{31}$$

71. (1) $\frac{1}{2} \times \pi r^2 = \pi(r-n)^2$

$$\Rightarrow \frac{1}{2} r^2 = (r-n)^2$$

$$\Rightarrow r = \sqrt{2}(r-n)$$

$$\Rightarrow r = \sqrt{2}r - \sqrt{2}n$$

$$\Rightarrow r(\sqrt{2}-1) = \sqrt{2}n$$

$$\Rightarrow r = \frac{\sqrt{2}n}{\sqrt{2}-1}$$

72. (3) Let the required side of triangle be x cm.

$$\text{So, } \frac{x^2}{7^2} = \frac{256}{196}$$

$$x^2 = \frac{49 \times 256}{196}$$

$$x = 8 \text{ cm}$$

73. (4) $\therefore 100\% = ₹ 50,000$

total percent spent on food and rent
 $= (45 + 14)\%$

$$\therefore 59\% = \frac{50,000}{100} \times 59 = ₹ 29,500$$

74. (1) Required ratio = $15 : 45 = 1 : 3$

75. (2) Required percentage

$$= \frac{14}{9} \times 100 = 156\%$$

76. (3) Change 'like' into 'likes'.
 When 'as well as' joins two subjects, the verb agrees with the 1st subject. Here the 1st subject 'Mohan' is singular. Hence it will take singular verb 'likes'.

77. (2) Change 'are' into 'is'. 'The number of' takes singular verb.

90. (3) 'Unless' is not followed by 'not'.

91. (4) A sentence containing 'scarcely' is supposed to be negative.

92. (2) This is an affirmative sentence.