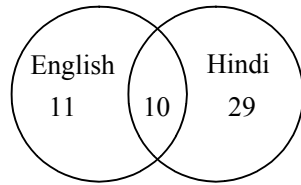


8. [1]



9. [2]
PUMPKIN

10. [3]

Let H be the number of hens; C be the number of cows; B be the number of bullocks; K be the number of keepers.

$$2H + 4C + 4B + 2K - 69 = H + C + B + K$$

[Given]

$$\Rightarrow H + 3C + 3B + K = 69 \quad \dots(1)$$

$$\text{Also, } H + C + B = 10K \text{ [Given]} \quad \dots(2)$$

$$H + C + B + K \leq 50 \text{ [Given]}$$

$$C = 2B \text{ [Given]}$$

$$C = H \text{ [Given]}$$

$$(1) \Rightarrow 11B + K = 69$$

$$(2) \Rightarrow 5B = 10K$$

$$\Rightarrow B = 2K \Rightarrow 23K = 69$$

$$\Rightarrow K = 3 \Rightarrow 11B = 66$$

$$\Rightarrow B = 6 \Rightarrow C = 12, H = 12$$

11. [1]

12. [3]

13. [1]

14. [2]

15. [1]

16. [2]

Each letter moves +2 steps.

17. [4]

$$19 \times 2 = 38, 38 \times 3 = 114,$$

$$114 \times 4 = 456.$$

18. [1]

1st letter moves -2 steps each time.

2nd letter moves $+1, +2, +3, +4$ steps respectively.

3rd letter moves $+2, +3, +2, +3$ steps respectively.

19. [2]

1st letter moves $+2, +3$ and $+4$ steps respectively. 2nd letter moves $-2, -3$ and -4 steps respectively.

20. [3]

1st number moves $+5, +7, +9, +11, +13$ steps respectively. 3rd number moves $+2$ steps each time.

2nd letter moves -1 step each time.

21. [2]

22. [3]

23. [2]

24. [1]

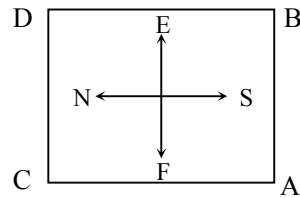
25. [2]

27. [1]

28. [1]

29. [4]

As per directions given in the question, the new figure formed is as follows :



30. [2]

31. [2]

32. [4]

33. [3]

34. [4]

35. [4]

36. [1]

37. [3]

38. [2]

39. [3]

40. [2]

41. [2]

42. [2]

43. [3]

44. [None] : Residual sea level – Measured sea level – Predicted sea level.

45. [4]

46. [4]

47. [1]

48. [4]

49. [1]

50. [4]

51. [2]

52. [4]

53. [3]

54. [1]

55. [4]

56. [1]

57. [1]

58. [4]

59. [2]

60. [3]

61. [2]

62. [4]

63. [1]

64. [4]

65. [1]

66. [1]

67. [2]

68. [2]

69. [3]

70. [1]

71. [3]

72. [1]

73. [1]

74. [1]

75. [2]

76. [2]

77. [4]

78. [4]

79. [4]

80. [2]

81. [4]

Any one candidate can be selected if he gets atleast 3 votes out of the five.

∴ Number of ways in which each candidate can be selected

$$= {}^5C_3 + {}^5C_4 + {}^5C_5$$

$$= 10 + 5 + 1 = 16$$

∴ The number of ways in which four candidates can be selected = $16 \times 4 = 64$
 ∴ The total number of ways in which the votes can be given
 = $64 \times \underline{4} = 64 \times 24 = 1536$

82. [1]

83. [3]

$$\begin{aligned} & {}^5C_4 \times {}^8C_6 + {}^5C_4 \times {}^8C_5 \\ &= {}^5C_1 \times {}^8C_2 \times 1 \times {}^8C_5 \\ &= 5 \times \frac{8 \times 7}{2 \times 1} + \frac{8 \times 7 \times 6}{3 \times 2 \times 1} \\ &= 140 + 56 = 196 \end{aligned}$$

84. [3]

$$\text{Sum of } n \text{ terms of an AP} = \frac{n}{2} [2a + (n-1)d] = 250$$

$$\text{Here } a = 7, d = \frac{1}{4}$$

[Given]

$$\therefore \frac{n}{2} \left[2 \times 7(n-1) \times \frac{1}{4} \right] = 250$$

$$\Rightarrow n \left[14 + \frac{n-1}{4} \right] = 500$$

$$\Rightarrow n[56 + n - 1] - 2000$$

$$\Rightarrow n^2 + 55n - 2000 = 0$$

$$\Rightarrow (n + 80)(n - 25) = 0$$

$$\Rightarrow n - 25$$

∴ No of members in the club = 25.

85. [1]

Let the edge of the third cube be x cm.

$$\therefore x^3 + 6^3 = 8^3 = 12^3$$

$$\Rightarrow x^3 + 216 + 512 = 1728$$

$$\Rightarrow x^3 - 1000 \Rightarrow x = 10$$

86. [2]

Area of the inner curved surface of the well dug

$$= (2\pi \times 2.5 \times 22.5)$$

$$= 2 \times \frac{22}{7} \times 3.5 \times 22.5 = 44 \times 0.5 \times 22.5 = 495 \text{ sq m.}$$

∴ Cost of plastering the inner curved surface of the well dug = $495 \times 3 = \text{Rs.}1485$.

87. [3]

Volume of the water flown in one second into the cylindrical tank

$$= \pi \times \left(\frac{1}{100} \right)^2 \times 6 = \frac{6\pi}{10000} \text{ cu.m.}$$

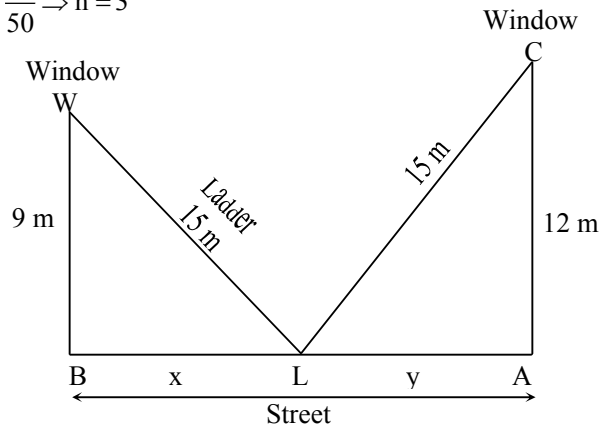
Volume of the water flown the cylindrical tank

$$= \frac{6 \times \pi}{10000} \times 30 \times 60 = \frac{108\pi}{100} \text{ cu.m.}$$

Let h be the level of water raised in the cylindrical tank of base radius 60 cm i.e. $\frac{3}{5}$ m

$$\therefore \pi \times \left(\frac{3}{5}\right)^2 \times h = \frac{108\pi}{100}$$

$$\Rightarrow \frac{9h}{35} = \frac{54}{50} \Rightarrow h = 3$$



$$\text{From } \triangle WBL, x^2 + 9^2 = 15^2$$

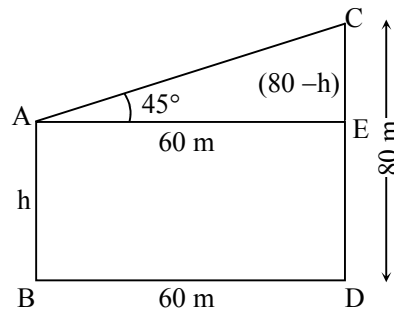
$$\Rightarrow x^2 = 144 \Rightarrow x = 12$$

$$\text{From } \triangle CAL, y^2 + 12^2 = 15^2$$

$$\Rightarrow y^2 = 81 \Rightarrow y = 9$$

$$\therefore \text{Width of the street} = x + y + 21$$

89. [1]



AB and CD are the two trees of heights h and h_1 respectively.

Given, $h_1 = 80$

$$\text{From } \triangle AEC, \frac{80 - h}{60} \tan 45^\circ$$

$$\Rightarrow 80 - h = 60 \Rightarrow h = 20$$

Height of the first tree - 20 m

90. [4]

If Mr Y is present, then Mrs X is not there.

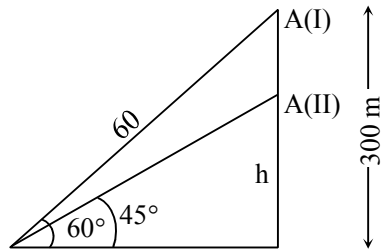
If Mr Y is not present, then Mrs X can be there.

\therefore Number of ways in which a committee of 3 ladies and 4 gentlemen can be appointed from 8 ladies and 7 gentlemen

$$= {}^7C_3 \times {}^7C_4 + {}^8C_3 \times {}^6C_4$$

$$= 1225 + 840 = 2065$$

91. [1]



Let h be the height of the lower plane from the ground.

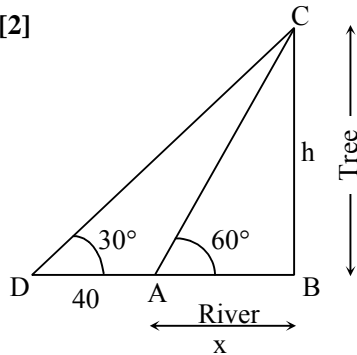
$$\therefore \frac{h}{x} = \tan 45^\circ = 1 \Rightarrow h = x$$

$$\frac{300}{x} = \tan 60^\circ = \sqrt{3}$$

$$\Rightarrow x = \frac{300}{\sqrt{3}} = 100\sqrt{3}$$

$$\Rightarrow h = 100\sqrt{3}$$

92. [2]



$$\frac{h}{x} = \tan 60^\circ = \sqrt{3} \Rightarrow h = \sqrt{3}x$$

$$\frac{h}{x+40} = \tan 30^\circ = \frac{1}{\sqrt{3}}$$

$$\Rightarrow h = \frac{x+40}{\sqrt{3}}$$

$$\therefore \sqrt{3}x = \frac{x+40}{\sqrt{3}} \Rightarrow x = 20$$

93. [1]

The probability that the person will have light in his room

$$= \frac{{}^4C_1 \times {}^6C_2 + {}^4C_2 \times {}^6C_1 + {}^4C_3 \times {}^6C_0}{{}^{10}C_3}$$

$$= \frac{4 \times 15 + 6 \times 6 + 4}{120} = \frac{60 + 36 + 4}{120} = \frac{100}{120} = \frac{5}{6}$$

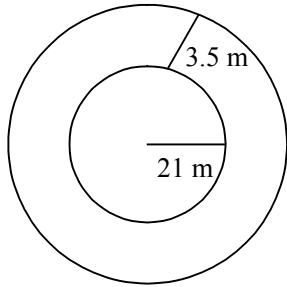
94. [2]

The probability that atleast one of the selected persons will be a woman

$$\begin{aligned} &= \frac{5}{13} \times \frac{8}{12} + \frac{5}{13} \times \frac{4}{12} \\ &= \frac{40}{156} + \frac{20}{156} = \frac{60}{156} = \frac{5}{13} \end{aligned}$$

95. [1]
Required probability = $0.99 \times 0.90 = 0.891$

96. [3]



Cost of gravelling the path @ Rs 4 per sq m.

$$\begin{aligned} &= 4 \times [\pi \times (24.5)^2 - \pi \times 21^2] \\ &= 4\pi [(24.5 + 21)(24.5 - 21)] \\ &= 4 \times \frac{22}{7} \times 45.4 \times 3.5 = 88 \times 45.5 \times 0.5 \\ &= 44 \times 45.5 = \text{Rs.}2002 \end{aligned}$$

97. [3]

Let the depth of the drainlet be h meters.

\therefore Volume of the earth dug from the drainlet 11 m wide, around a rectangular plot of dimensions 240 m \times 180 m

$$= h [260 \times 200 - 240 \times 180] = 8800 h \text{ cu m.}$$

Now this is spread over the plot raising its height by 25 cm, i.e. $\frac{1}{4}$ m

$$\therefore 8800h = 240 \times 180 \times \frac{1}{4}$$

$$\Rightarrow h = \frac{60 \times 180}{8800} = \frac{27}{22}$$

$$\Rightarrow h = 1.227$$

98. [2]

Let the water flow through an aperture 60 cm \times 45 cm @ h meters / hours

The rectangular tank 225 m \times 162 m is filled to a height of 4 cm, i.e. $\frac{1}{25}$ m in one hour.

$$\therefore 225 \times 162 \times \frac{1}{25} = \frac{60}{100} \times \frac{45}{100} \times h$$

$$\Rightarrow h = \frac{9 \times 162 \times 100 \times 100}{60 \times 45} = 5400$$

\therefore Required speed of flow of water = 5400 m/ hr.

99. [3]

Whole surface area of the pipe

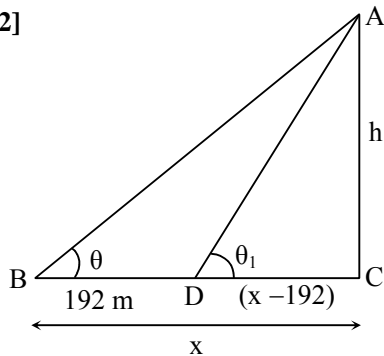
$$= 2\pi \times 20 \times [12.5 + 11.5] \text{ (Inter and outer curved surfaces)} + 2\pi[(12.5)^2 - (11.5)^2] \text{ [Surface areas of the two circular rims]}$$

$$= 40\pi \times 24 + 2\pi \times 24$$

$$= 24 \times 42\pi = 24 \times 42 \times \frac{22}{7} = 132 \times 22$$

$$= 3168 \text{ cm}^2$$

100. [2]



Let $BC = x$

$$\tan \theta = \frac{5}{12}, \tan \theta_1 = \frac{3}{4}$$

$$\therefore \frac{h}{x} = \tan \theta = \frac{5}{12} \Rightarrow \frac{h}{x} = \frac{5}{12} \quad \dots(1)$$

$$\frac{h}{x - 192} = \tan \theta_1 = \frac{3}{4}$$

$$\Rightarrow 4h = 3(x - 192)$$

$$\Rightarrow \frac{4 \times 5x}{12} = 3x - 576$$

$$\Rightarrow 5x = 9x - 1728$$

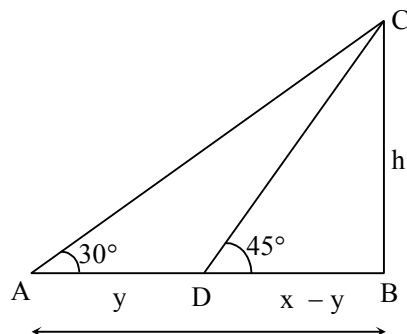
$$\Rightarrow 4x = 1728 \Rightarrow x = 432$$

$$\therefore \frac{h}{x} = \frac{5}{12}$$

$$\Rightarrow h = \frac{5 \times 432}{12} = 5 \times 36 = 180$$

101. [2]

Let h be the height of the tower. It takes 12 minutes to reach the car at the point D from the point A , i.e. the distance of y metres is covered by the car in 12 min.



$$\therefore \frac{h}{x} = \tan 30^\circ = \frac{1}{\sqrt{3}} \Rightarrow h = \frac{x}{\sqrt{3}} \quad \dots(1)$$

$$\frac{h}{x-h} = \tan 45^\circ = 1 \Rightarrow h = x - y \quad \dots(2)$$

(1) and (2)

$$\Rightarrow y = x - \frac{x}{\sqrt{3}} = x \left[\frac{\sqrt{3}-1}{\sqrt{3}} \right]$$

$$\Rightarrow x - y = \frac{x}{\sqrt{3}}$$

Thus to cover distance AD = y

$$= x \left(\frac{\sqrt{3}-1}{\sqrt{3}} \right) \text{ units, the car takes 12 minutes.}$$

\(\therefore\) To cover the distance DC

$$= x - y$$

$$= x - \frac{x(\sqrt{3}-1)}{\sqrt{3}}$$

$$= \frac{x[\sqrt{3}-\sqrt{3}+1]}{\sqrt{3}} = \frac{x}{\sqrt{3}}, \text{ the car will take}$$

$$\frac{12 \times \sqrt{3}}{x(\sqrt{3}-1)} \times \frac{x}{\sqrt{3}} = \frac{12}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1}$$

$$= \frac{12\sqrt{3}+12}{3-1} = 6\sqrt{3} + 6 = 16.392 \text{ minutes}$$

$$\approx 16 \text{ min } 23 \text{ seconds}$$

102. [2]

Overall average

$$= \frac{40 \times 50 + 35 \times 60 + 45 \times 55 + 42 \times 45}{40 + 35 + 45 + 42}$$

$$= \frac{2000 + 2100 + 2475 + 1890}{162} = \frac{8465}{162} = 52.25$$

103. [3]

$$71.8(B + G) = 71B + 73C$$

$$\Rightarrow 0.8B = 1.2G \Rightarrow \frac{B}{G} = \frac{3}{2}$$

104. [4]

Minimum selling price of the first 10 products = $420 \times 10 = 4200$

Minimum selling price of the 14 out of the remaining 15 products = 14000

\(\therefore\) Total minimum price of 24 products

$$= \text{Rs. } 18200.$$

\(\therefore\) Total retail price of 25 products

$$= 1200 \times 25 = \text{Rs. } 30000$$

\(\therefore\) Price of the most expensive product

$$= 30000 - 18200 = \text{Rs. } 11800$$

105. [4]

Suppose x litres of water was drained away.

$$\therefore (x - 6) + x = 12$$

$$\Rightarrow 2x = 18 \Rightarrow x = 9$$

\therefore 9 litres of water was drained away.

106. [1]

Out of 10 litres of solution, there is 1 litre of nitric acid and 9 litres of water.

Let x litres of water be added to the solution so that the diluted solution is of 4% strength.

$$\therefore 4\% \text{ of } (10 + x) = 1 \Rightarrow x = 15.$$

107. [3]

Let the number of ball bearings in the first shipment be x .

$$\therefore 1\% \text{ of } x + 4.5\% \text{ of } 2x = 100$$

$$\frac{x}{100} + \frac{9x}{100} = 100$$

$$\Rightarrow 10x = 10000 \Rightarrow x = 1000$$

108. [3]

1, 2, 3, 4, 5, 6, 12, 13, 14, 15, 16, 23, 24, 25, 26, 34, 35, 36, 45, 46.

109. [2]

No. of literate population = 148000

No. of males = 166000

No. of females = 296000 - 166000 = 130000

No. of literate males = 70% of 166000

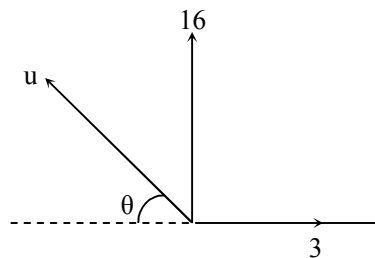
$$= 70 \times 1660 = 116200$$

$$= 148000 - 116200 = 31800$$

110. [4]

15 km

111. [4]



Let the speed of the boat be u km per hour.

Speed of the current is 3 km per hour.

Speed of the boat moving perpendicular to the direction of the current is 16 km/hr.

$$\therefore u \cos \theta = 3, u \sin \theta = 16$$

$$\Rightarrow \tan \theta = \frac{16}{3} \Rightarrow \sin \theta = \frac{16}{\sqrt{265}}$$

Hence $u \sin \theta = 16$

$$\Rightarrow u \cdot \frac{16}{\sqrt{265}} = 16$$

$$\Rightarrow u = \sqrt{265} = 16.28 \text{ km per hour.}$$

$$\begin{aligned} \therefore \text{Speed of the boat against the current} \\ = u - 3 = 16.28 - 3 \\ = 13.28 \text{ km per hour.} \end{aligned}$$

112. [4]

Suppose R and S both meet when R has covered a distance of x km @ 3km/hr, and S has covered a distance of $(17.5 - x)$ km @ 4 km/hr.

$$\therefore \frac{x}{3} = \frac{17.5 - x}{4}$$

$$\Rightarrow 4x = 52.5 - 3x \Rightarrow 7x = 52.5 \Rightarrow x = 7.5$$

\therefore R has covered a distance of 7.5 km @ 3 km/hr in $2\frac{1}{2}$ hours. S has also covered a distance of 10 km @ km/hr in $2\frac{1}{2}$ hours.

\therefore R and S both meet at 12.30 pm.

113. [3]

Let MP be Rs. x

Gain = 35%

$$\therefore \text{CP} = \frac{x \times 100}{100 + 35} = \frac{100x}{135} = \frac{20x}{27}$$

$$\text{SP} = x - 10\% \text{ of } x = \frac{9x}{10}$$

$$\therefore \text{Profit}\% = \frac{\frac{9x}{10} - \frac{20x}{27}}{\frac{20x}{27}} \times 100$$

$$= \frac{43x}{270} \times \frac{27}{20x} \times 100 = \frac{43}{2} = 21.5$$

114. [2]

B alone can do a work in 20 hours.

\therefore A alone can do $\frac{3}{2}$ of the work in 20 hours.

i.e. A alone can do the same work in $\frac{40}{3}$ hours.

\therefore (A + B)'s one hour's mark

$$= \frac{3}{40} + \frac{1}{20} = \frac{5}{40} = \frac{1}{8}$$

\Rightarrow A and B together can finish the whole work in 8 hours.

115. [4]

$4A = 6B = 11C$ [Given]

$$\Rightarrow \frac{A}{33} = \frac{B}{22} = \frac{C}{12}$$

$$\Rightarrow \frac{A}{66} = \frac{B}{44} = \frac{C}{24}$$

116. [3]

Let the length of the journey be x km.
Suppose speed of the train be y km/hr.

$$\therefore \text{Time taken to cover } x \text{ km} = \frac{x}{y} \text{ hours}$$

Now, according to the question,

$$\frac{x}{y+6} = \frac{x}{y} - 4, \frac{x}{y-6} = \frac{x}{y} + 6$$

Solving these equations, we get $y = 30$, $x = 720$ km.

117. [4]

Let the number of rows be y .
Let the number of students in each row be x .

$$\therefore (x+4)(y-2) = xy$$

$$(x-4)(y+4) = xy$$

$$\Rightarrow 4y - 2x = 8$$

$$-4y + 4x = 16$$

$$\Rightarrow x = 12, y = 8$$

\therefore Total number of students in the class = 96.

118. [3]

Let the fixed expenses be Rs. C .
Let consumption of wheat = x quintals per month

$$\therefore C + 250x = 1000$$

$$\Rightarrow x = 2, C = 500$$

$$\therefore C + 350x = 1200$$

i.e. The total monthly expenses of the family are Rs. 1200, when the price of wheat is Rs. 350 per quintal.

119. [4]

Let the usual speed of the plane be x km/hr

$$\therefore \text{Time taken in covering the distance of } 1500 \text{ km} = \frac{1500}{x} \text{ hours}$$

$$\therefore \frac{1500}{x+250} = \frac{1500}{x} - \frac{1}{2}$$

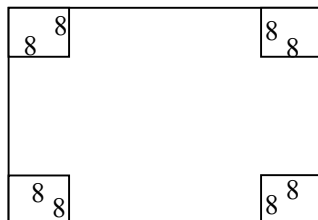
$$\Rightarrow 3000x = 3000(x+250) - x(x+250)$$

$$\Rightarrow x^2 + 250x - 3000 \times 250 = 0$$

$$\Rightarrow \frac{-250 \pm \sqrt{62500 + 3000000}}{2}$$

$$= \frac{-250 + 1750}{2} = 750$$

120. [3]



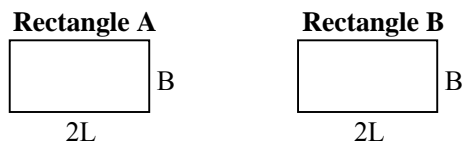
Volume of the box made of the remaining sheet
 $= 33 \times 20 \times 8 = 5120 \text{ cm}^3$

121. [3] 122. [2] 123. [4]
 124. [2] 125. [3] 126. [4]
 127. [1] 128. [2] 129. [3]
 130. [2] 131. [2] 132. [3]
 133. [2] 134. [1] 135. [2]
 136. [4] 137. [4] 138. [2]
 139. [1] 140. [2] 141. [3]
 142. [3] 143. [4] 144. [1]
 145. [3] 146. [1] 147. [1]
 148. [4] 149. [3] 150. [2]
 151. [3] 152. [3] 153. [1]
 154. [4] 155. [2] 156. [1]
 157. [4]

158. [3]
 My India : S Nihal Singh
 My Truth : Indira Gandhi
 Guide : RK Narayan

159. [2] 160. [1]

162. [2]



Perimeter = $4L + 2B$ Perimeter = $2L + 2B$

162. [2]
 (B) \Rightarrow In one hour, Michael can read $30 \times 60 = 1800$ ten-word lines.
 i.e. $\frac{1800}{25}$ pages, i.e. 72 pages.
163. [1]
 40 miles per hour is the average speed.
164. [4]
 30% of the crew are carpenters or painters

165. [1]
No .6% of the people in city H, who are 30 years old or older, are bilingual.

166. **Proportion in the total energy Demand (Asia)**

	2005	2010	2020
Natural Gas	$\frac{1.5}{19} = 0.08$	$\frac{2.5}{34} = 0.07$	$\frac{4.5}{48} = 0.09$
Natural Gas and Hydropower	$\frac{3}{19} = 0.16$	$\frac{4.7}{34} = 0.14$	$\frac{9.1}{48} = 0.19$
Hydropower	$\frac{1.5}{19} = 0.079$	$\frac{2.2}{34} = .065$	$\frac{4.6}{48} = 0.096$
Nuclear	$\frac{2}{19} = 0.11$	$\frac{4.8}{34} = 0.14$	$\frac{5.5}{48} = 0.11$
Solid Fuels	$\frac{6}{19} = 0.32$	$\frac{13}{34} = 0.38$	$\frac{15.4}{48} = 0.32$
Petroleum	$\frac{8}{19} = 0.42$	$\frac{11.5}{34} = 0.34$	$\frac{18}{48} = 0.375$

167.

168. [4]
Demand in 2020 as a ratio of Demand in 2005 for various Energy Sources

Petroleum: $\frac{18}{8} = 2.25$

Natural Gas : $\frac{4.5}{1.5} = 3$

Solid Fuels : $\frac{15.4}{6} = 2.57$

Nuclear : $\frac{5.5}{2} = 2.75$

Hydropower : $\frac{4.6}{1.5} = 3.07$

169. [4]
Hydropower only Demand in the rest of the World [excluding Asia] as proportion of Total Energy Demand of the World (including Asia) over the years

	2005	2010	2020
Petroleum	$\frac{48}{56} = 0.86$	$\frac{74.5}{86} = 0.87$	$\frac{90}{108} = 0.83$
Natural Gas	$\frac{36.5}{38} = 0.960$	$\frac{64.5}{67} = 0.962$	$\frac{91.5}{96} = 0.953$
Solid Gas	$\frac{40}{46} = 0.87$	$\frac{41}{54} = 0.76$	$\frac{51.6}{67} = 0.77$
Nuclear	$\frac{6}{8} = 0.75$	$\frac{4.2}{9} = 0.47$	$\frac{6.5}{12} = 0.54$
Hydropower	$\frac{10.5}{12} = 0.875$	$\frac{11.8}{14} = 0.842$	$\frac{12.4}{17} = 0.73$

170. [4]

$$\text{Petroleum} : \frac{250}{690} = 36.23\%$$

$$\text{Natural Gas} : \frac{201}{690} = 29.13\%$$

$$\text{Solid Fuels} : \frac{167}{690} = 24.20\%$$

$$\text{Nuclear} : \frac{29}{690} = 4.20\%$$

$$\text{Hydropower} : \frac{43}{690} = 6.23\%$$

Petroleum and Natural Gas together OR Petroleum and Solid Fuels together meet more than 60% of the total energy demand of the World and Asia both.

171. [1]

Total production of cars in 2000 = 860000 out of 1620000 > 50%

172. [3]

In 1999,

No. of Cars exported = 12% of 480000 = 57600

No. of Scooters exported = 20% of 600000 = 120000

No. of Motorbikes exported = 10% of 4000000 = 400000

Total No. of automobiles exported = 217600

173. [2]

In 1996,

No. of Cars exported = 28% of 48 = 13.44

No. of Scooters exported = 35% of 60 = 21

No. of Motorbikes exported = 42% of 38 = 15.96

$$\begin{aligned} \therefore \text{Required ratio} &= 13.44 : 21 : 15.96 \\ &= 1344 : 2100 : 1596 \\ &= 16 : 25 : 19 \end{aligned}$$

174. [3]

In 1998,

No. of cars exported = 30% of 75 = 22.5

No. of scooters exported = 40% of 60 = 24

No. of Motorbikes exported = 25% of 84 = 21

Let the export price of the car be 2K.

Let the export price of the Scooter be K

Let the export price of the motorbike be 1.5K

$$\begin{aligned} \therefore \text{Ratio of their export earnings} &= 45 : 24 : 31.5 \\ &= 450 : 240 : 325 \\ &= 30 : 16 : 21 \end{aligned}$$

175. [1]

56 out of 140 in 1997 i.e. 40% in 1997

176. [4]

Cities	No. of Persons Surveyed	No. of Persons Using train	No. of Persons Using Bus	No. of Persons Using Cars
Pune	2000	1500 (75%)	250 (12.5%)	250 (12.5%)
Kanpur	4000	2000 (50%)	500 (12.5%)	1500 (37.5%)
Raisen	6000	3000 (50%)	2250 (37.5%)	750 (12.5%)
Surat	3000	750 (25%)	750 (25%)	1500 (50%)
Trivandrum	8000	1200 (15%)	4000 (50%)	2800 (35%)
Total	23000	8450	7750	6800

177. [4]

$$\frac{1500 + 2000 + 3000 + 1200}{4}$$

$$= \frac{7700}{4} = 1925$$

178. [3]

179. [3]

180. [2]

181. [1]

Number of valid votes polled in 2002 for other political parties = 11% of 5 crore = 55 lakh

∴ Average number of valid votes polled for winning one seat in 2002 for other political parties

$$= \frac{55}{5} = 11 \text{ Lakh}$$

182. [2]

In 1995, 67 to 121

$$\text{i.e. } \frac{54}{67} \times 100 = 80.6\%$$

$$\text{In 2002, 117 to 125, i.e. } \frac{8}{117} \times 100 = 6.84\%$$

183. [1]

No. of valid votes in 1998

$$= \frac{2.24}{44.8} \times 100 = 5 \text{ crore}$$

No. of valid votes in 1990

$$= \frac{1.228}{30.7} \times 100 = 4 \text{ crore}$$

184. [4]

68.68% [125 out of 182]

185. [4]

186. [2]
 Total Number of workers

	1998 of out of	2000 out of
Factory	2000	2400
P	260	264
Q	360	600
R	300	384
S	480	480
T	440	432
U	160	240
	2000	2400

187. [3]
 160 to 240

188. [3]

	No. of increased	Workers in 2000
Factory		
P	–	4
Q	–	240
R	–	84
U	–	80
Total	–	408

189. [4]
 440 to 432

190. [1]
 No. of workers in 2000 in top two categories Q and S = $600 + 480 = 1080$
 No. of workers in 1998 in the lowest two categories P and U = $260 + 160 = 420$
 \therefore Required maximum difference = $1080 - 420 = 660$.

191. [1]
 No. of students passed in 'RUBY'
 $= 40 + 35 + 35 = 110$
 No. of students passed in 'TOPAZ'
 $= 70 + 55 + 60 = 185$
 No. of students passed in 'PEARL'
 $= 45 + 75 + 65 = 185$
 No. of students passed in 'SAPPHIRE'
 $= 60 + 80 + 90 = 230$
 \therefore Average number of students, for each house, who have passed in the given years
 $= \frac{110 + 185 + 185 + 230}{12}$
 $= \frac{710}{12} = 59$

192. [4]
 Refer Q.191

193. [2]
 45 to 75 (from 1998 to 1999), i.e. 66.67%.

194. [4]
 Number of Students Passing The Exam in 2001
 House No.of Students Passed (1999–2000–2001)

Ruby	35	(35–35–35)
Topaz	65	(55–60–65)
Pearl	55	(75–65–55)
Sapphire	100	(80–90–100)
Total	255	

195. [1]
 In 1998, out of 250 students, number of students passed = 70 + 60 + 45 + 40 = 215
 Percentage of students passed in

$$1998 \frac{215}{250} \times 100 = \frac{215 \times 2}{5} = 86$$

In 1999, out of 300 students, number of students passed = 80 + 75 + 55 + 35 = 245
 Percentage of students passed in

$$1999 = \frac{245}{300} \times 100 = 82$$

In 2000, out of 350 students, number of students passed = 90 + 65 + 60 + 35 = 250
 Percentage of students passed in

$$2000 = \frac{250}{350} \times 100 = \frac{500}{7} = 71$$

196. [3]

197. [2]

198. [2]

199. [1]

200. [4]

