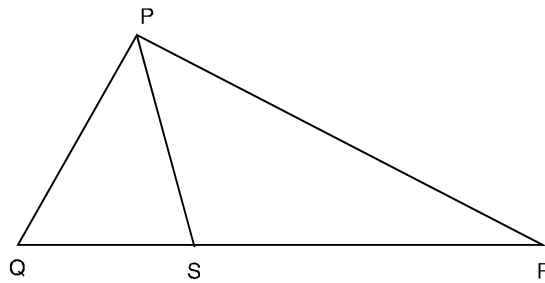
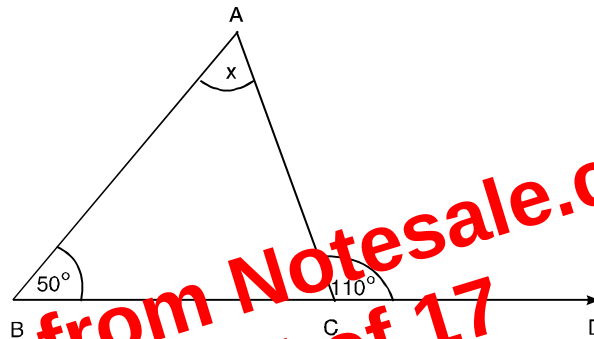


23. In the given figure, S is any point on QR. Prove that

$$PQ + QR + RP > 2PS$$



24. In the given figure, find the value of x.



25. The volume of a cube is 1728 cubic cm. Find its total surface area.

26. Evaluate : $\frac{\cos^2 32^\circ + \cos^2 58^\circ}{\sin^2 59^\circ + \sin^2 31^\circ}$

27. Find the sum

$$\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \dots + \frac{1}{156}$$

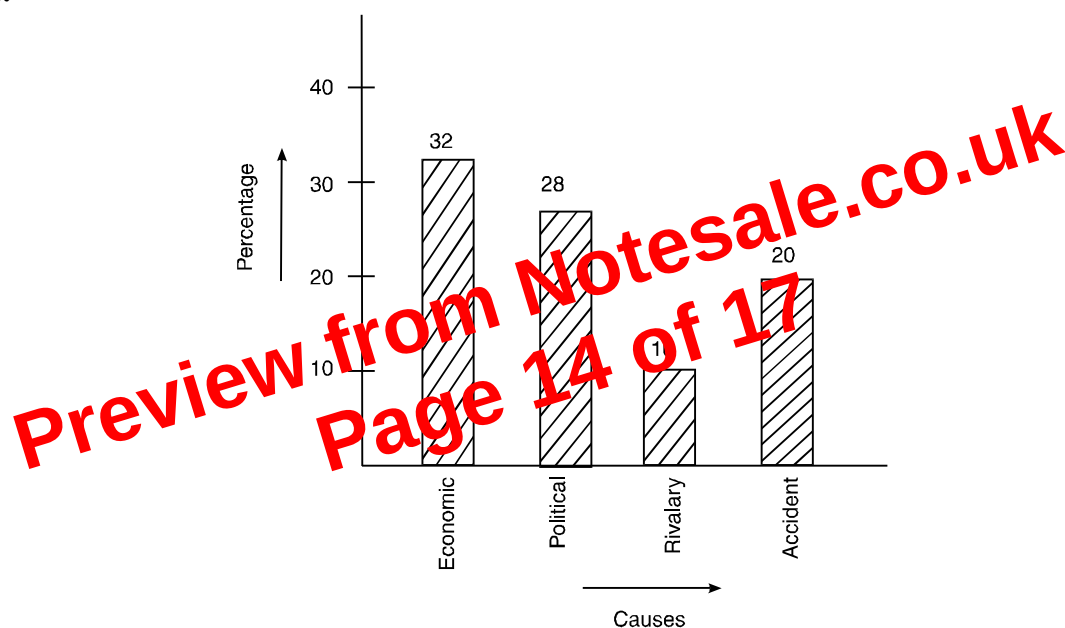
28. Prove that : $\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{b-c}+x^{a-c}} = 1$

29. A salesman sells articles at Rs 5 each. He sells 1600 articles in the first week. In the second week, he sells 15% more than in the first week and in the third week, he sells 10% more than in the second week.

Calculate the amount received by the salesman if he gets 12% of the price of each article on the first 1000 sold and 15% of the price of each article he sells in excess of 1000.

33. (i) Possible outcomes are
 HHH, HHT, HTH, THH, HTT
 THT, TTH, TTT 2
- $\therefore$ Total number of possible outcomes = 8 $\frac{1}{2}$
- (ii) Favourable outcomes are
 HHH, HHT, HTH, THH 1
- $\therefore$ Number of favourable outcomes = 4 $\frac{1}{2}$
- $\therefore$ Required probability = $\frac{4}{8} = \frac{1}{2}$ 1

34.



1 mark for each correct bar 1 x 4 = 4

For correct axis and making 1

OR

(For visually impaired learners only)

- (i) 10% 1
- (ii) $(10 + 10 + 4 + 5)\% = 29\%$ 3
- (iii) 4% 1

35. **Given :** Parallelograms ABCD and PBCQ stand on the same base BC and between the same parallels BC and AQ. 1

To prove : Area (ABCD) = Area (BCQP) 1