





$$\Rightarrow AG - OG = OG + GD$$

$$\Rightarrow AG - 2 = 2 + GD$$

$$\Rightarrow AG - GD = 4$$

$$\Rightarrow GD = 4 (\because AG = 2GD)$$

$$\therefore AO = OG + GD$$

$$(2 + 4) = 6 \text{ cm}$$

40. (3)  $x \sin 60^\circ \cdot \tan 30^\circ = \sec 60^\circ \cdot \cot 45^\circ$

$$\Rightarrow x = \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{3}} = 2 \times 1$$

$$\Rightarrow x = 4$$

42. (2)  $2^2 + 4^2 + 6^2 + \dots + 20^2$   
 $= 2^2 (1^2 + 2^2 + 3^2 + \dots + 10^2)$   
 $= 4 \times 385$   
 $= 1540$

43. (2) Time taken by B alone =

$$= \frac{1}{\frac{1}{12} - \frac{1}{28}}$$

$$= \frac{12 \times 28}{28 - 12} = 21 \text{ days}$$

44. (3) Time taken by the leak to empty the tank

$$= \frac{10 \times 9}{10 - 9} = 90 \text{ hours}$$

45. (4) Ratio of their 1 day's work

$$= \frac{1}{3} : \frac{1}{4} : \frac{1}{6}$$

Ratio of their 1 day's efficiency

$$= 4 : 3 : 2$$

Ratio of their total efficiency

$$= 4 \times 7 : 3 \times 8 : 2 \times 10$$

$$= 28 : 24 : 20$$

Share of skilled labourer

$$= \frac{28}{72} \times 369 = ₹ 143.50$$

47. (2)  $l = \sqrt{12^2 + 9^2} = 15 \text{ m}$

Required cost = CSA  $\times$  ₹ 120

$$= \pi \times 12 \times 15 \times 120$$

$$= ₹ 67824$$

48. (2) Required percentage

$$= \frac{108}{360} \times 100 = 30\%$$

49. (3) Amount spent on labour in 2001

$$= \frac{90}{360} \times 360000 = ₹ 90,000$$

Amount spent of labour in 2001

$$= \frac{100}{360} \times 8,64000 = ₹ 240000$$

Required percentage

$$= \frac{240000 - 90000}{360000} \times 100$$

$$= 41 \times \frac{2}{3} \%$$

50. (4) Amount spent on steel in 1991

$$= \frac{50}{360} \times 360,000 = ₹ 50,000$$

Amount spent on steel in 2001

$$= \frac{60}{360} \times 864,000 = ₹ 1,44,000$$