

Hassan, ALi, Akbar, Nasir and Shabbaz are classmates having different pocket money. Hassan's pocket money is one third as much as of ALi and ALi has five times as much as Akbar. Akbar has thrice as much as Nasir and Shabbaz gets equal to Nasir and that of ALi. If they get Rs. 8,000 then find pocket money of each.

Soln:-

$$\text{Hassan (H)} = \frac{1}{3}(\text{ALi})$$

$$\text{ALi (A)} = 5(\text{Akbar})$$

$$\text{Akbar (K)} = 3(\text{Nasir})$$

$$\text{Shabbaz (S)} = \text{Nasir (N)} + \text{ALi (A)}$$

So, we can write above

$$H = \frac{1}{3}A \rightarrow (1)$$

$$A = 5K \rightarrow (2)$$

$$K = 3N \rightarrow (3)$$

$$S = N + A \rightarrow (4)$$

Using, eqn (3), Eqn (2) and (4) becomes

$$\boxed{K = 3N}$$

$$A = 5(3N)$$

$$A = 15N$$

$$H = \frac{1}{3}(15N)$$

$$H = 5N$$

$$S = N + 15N$$

$$S = 16N$$

For N :-

$$S - 15N = N$$

$$N = (16 - 15)N$$

$$\text{Nasir}(N) = 1N$$

$$\text{Total parts} = H + A + K + N + S$$

$$= 5N + 15N + 1N + 16N$$

$$\text{Total parts} = 40N$$

Share<sup>s</sup> of Hassan (H) =  $\frac{\text{given ratio (Total amount)}}{\text{total part}}$



$$\text{Hassan's share} = \frac{5N}{40N} (8,000Rs)$$

$$\text{Hassan's share} = Rs 1000$$

$$\text{Ali's share} = \frac{15N}{40N} (8,000)$$

$$\text{Ali's share} = Rs 3,000$$

$$\text{Nasir's share} = \frac{1N}{40N} (8,000)$$

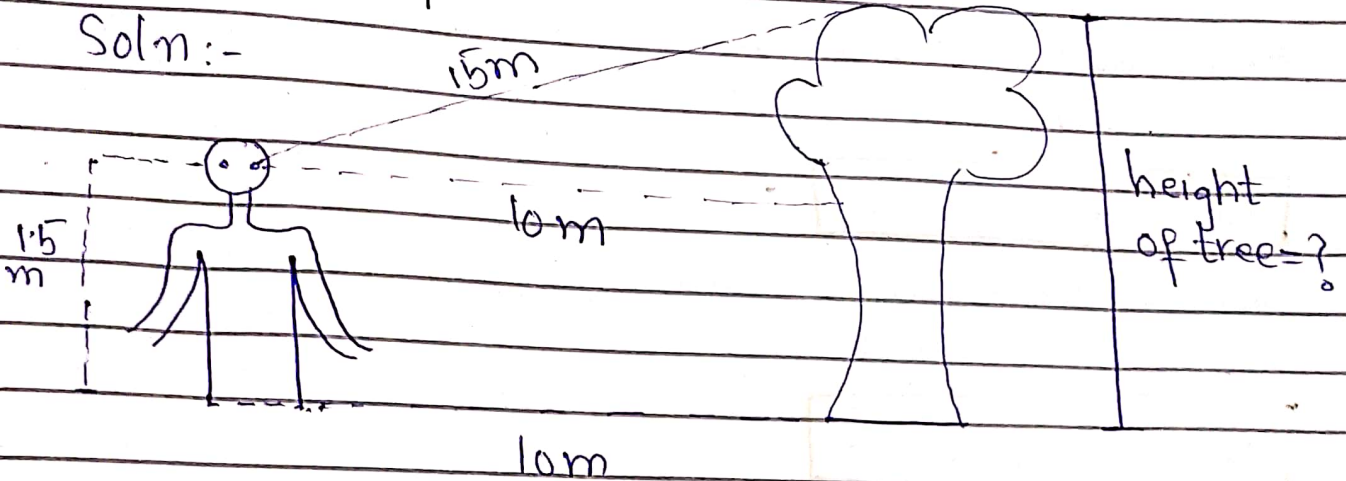
$$\text{Nasir's share} = Rs 200$$

$$\text{Shahbaz's share} = \frac{16N}{40N} (8,000)$$

$$\text{Shahbaz's share} = Rs 32,000$$

Ali is standing 10 meters away from a tree. The distance of his eye from his feet is 1.5 meters. Given that the distance from his eyes to the top of the tree is 15 meters. Find the height of the tree.

Soln:-



By using pythagorean theorem

$$(\text{Hyp})^2 = (\text{base})^2 + (\text{perp})^2$$

$$(\text{perp})^2 = (\text{Hyp})^2 - (\text{base})^2$$

$$= (15)^2 - (10)^2$$

$$= (225 - 100) \text{ m}$$

$$(\text{perp})^2 = 125 \text{ m}$$

$$\boxed{\text{perpendicular} = 5\sqrt{5} \text{ m}}$$



The distance from eye to the top of tree is  $5\sqrt{5}$  m, while the distance from eye to the feet is 1.5 m. Thus, the height of tree is  $5\sqrt{5}$  m + 1.5 m.