

## HOT PROBLEMS

(Problems for developing Higher Order Thinking Skill)

### Extra

- 1) Oil tins of cuboidal shape are made from a metallic sheet with length 8m and breadth 4m. Each tin has dimensions 60 x 40 x 20 in cm and is open from the top. Find the number of such tins that can be made?
- 2) In  $\Delta ABC$ ,  $BC = 5.8\text{cm}$ ,  $BQ \perp AC$ ,  $CQ \perp QB$ ,  $BP = 5$ ,  $CQ = 4.8\text{cm}$ . Construct  $\Delta ABC$ .

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### Solutions

- 1) Oil tins of cuboidal shape are made from a metallic sheet with length 8m and breadth 4m. Each tin has dimensions 60 x 40 x 20 in cm and is open from the top. Find the number of such tins that can be made?

**Solution :**

**Cuboid:**

Length of metal sheet = 8m    b = 4m

The top of the tins are open.

The metal sheet required for 1 tin = area of base + Surface area of vertical faces.

$l = 60\text{cm}$      $b = 40\text{cm}$      $h = 20\text{cm}$

$$\begin{aligned}\therefore \text{Surface area of vertical faces} &= 2h [l + b] \\ &= 2 \times 20 [60 + 40]\end{aligned}$$

$$= 2 \times 20 \times 100$$

$$= 4000\text{cm}^2$$

$$\therefore \text{Area of the base} = l \times b$$

$$= 60 \times 40 = 2400\text{cm}^2$$

$$\therefore \text{Area of sheet required} = 4000 + 2400 = 6400\text{cm}^2$$

$$\therefore \text{Area of metallic sheet} = l \times b$$

$$= 8 \times 4$$

$$= 800 \times 400$$

$$= 320000\text{cm}^2$$

$$\therefore \text{Number of tins} = \frac{\text{area of metallic sheet}}{\text{area of sheet required}}$$

$$= \frac{320000}{6400}$$

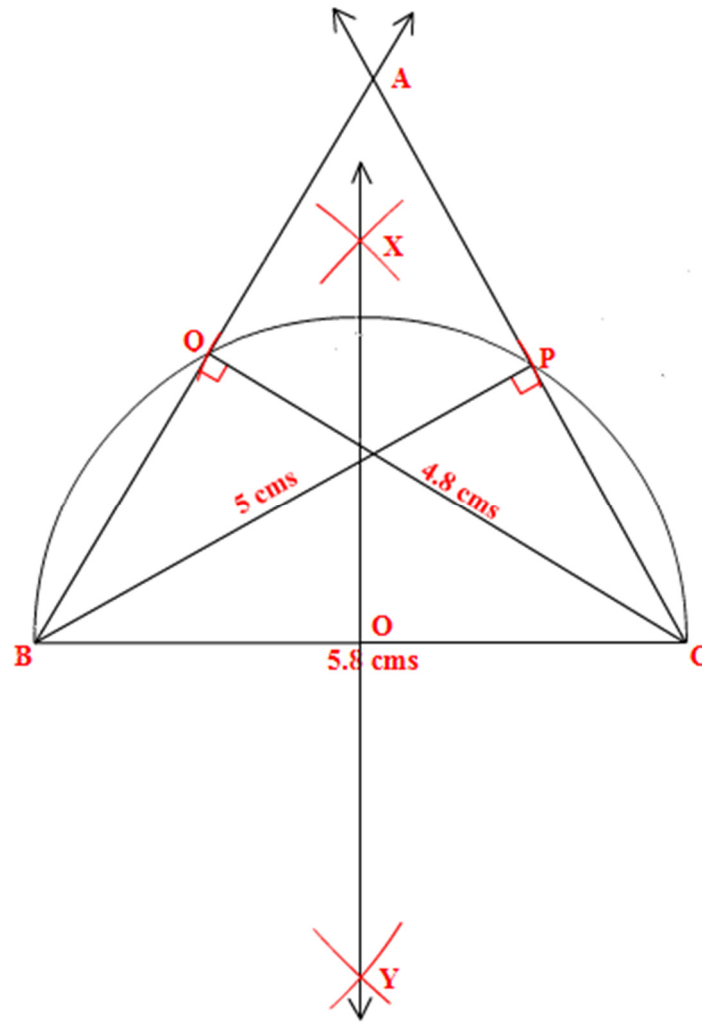
$$= 50$$

$$\therefore \text{No. of tins that can be made} = 50$$

2) In  $\Delta ABC$ ,  $BC = 5.8\text{cm}$ ,  $BQ \perp AC$ ,  $CQ \perp QB$ ,  $BP = 5$ ,  $CQ = 4.8\text{cm}$ . construct  $\Delta ABC$ .

**Solution:**

PLEASE VIEW THE ANIMATION FILE FOR THIS SOLUTION



Study