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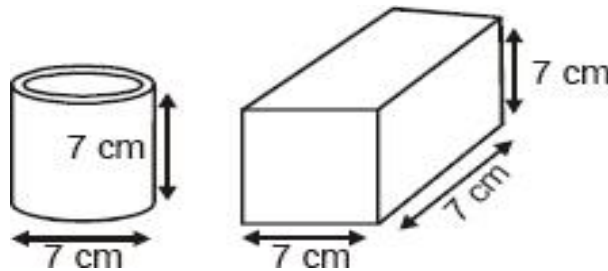
(Affiliated to CBSE up to +2 Level)

CLASS: VIII

SUB.: MATHS (NCERT BASED)

DATE: 14-03-2021

6. Describe how the two figures at the right are alike and how they are different. Which box has larger lateral surface area.



Sol. Try yourself

7. A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. How much sheet of metal is required?

Sol. Here, $r = 7\text{m}$ and $h = 3\text{ m}$.

Sheet of metal required to make a closed cylinder = Total surface area of the cylinder. = $(2\pi rh + 2\pi r^2)$ sq. units.

$$= (2 \times \frac{22}{7} \times 7 \times 3 + 2 \times \frac{22}{7} \times 7 \times 7)$$

$$= (132 + 308) \text{ m}^2 = 440 \text{ m}^2$$

8. The lateral surface area of a hollow cylinder is 4224 cm^2 . It is cut along its height and formed a rectangular sheet of width 33 cm. Find the perimeter of rectangular sheet.

Sol. A hollow cylinder is cut along its height to form a rectangular sheet.

Area of cylinder = Area of rectangular sheet $4224 \text{ cm}^2 = 33 \text{ cm} \times \text{Length}$

$$\text{Length} = \frac{4224 \text{ cm}^2}{33 \text{ cm}} = 128 \text{ cm}$$

Thus, the length of the rectangular sheet is 128 cm. Perimeter of the rectangular sheet

$$= 2 (\text{Length} + \text{Width})$$

$$= [2(128 + 33)] \text{ cm}$$

$$= (2 \times 161) \text{ cm}$$

$$= 322 \text{ cm}$$

9. A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and length is 1 m.

Sol. In one revolution, the roller will cover an area equal to its lateral surface area.

Thus, in 1 revolution, area of the road covered = $27\pi rh$

$$= 2 \times \frac{22}{7} \times 42 \text{ cm} \times 1 \text{ m}$$

$$= 2 \times \frac{22}{7} \times \frac{42}{100} \text{ m} \times 1 \text{ m} = \frac{264}{100} \text{ m}^2$$

In 750 revolutions, area of the road covered

$$= \left(750 \times \frac{264}{100} \right) \text{ m}^2 = 1980 \text{ m}^2$$



10. A company packages its milk powder in cylindrical container whose base has a diameter of 14 cm and height 20 cm. Company places a label around the surface of the container (as shown in the figure). if the label is placed 2 cm from top and bottom, what is the surface area of the label.



Sol. Try yourself