Provincial Education Department Sabaragamuwa – Week School

Subject: Mathematics

week - 42

Grade: 10

Translated by: Ms. N. Dematage
Ke/Dehi/ Ruwanwella Royal College

Surface Area of Solid Objects
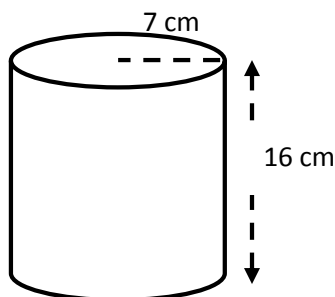
Surface area of right cylinder
➢ Curved surface area of right cylinder with height "h" and radius of cross section "r" = 2πrh
➢ Area of two circular faces = πr² x 2
➢ Area of total surface area = 2πrh + 2πr²

Surface area of triangular prism
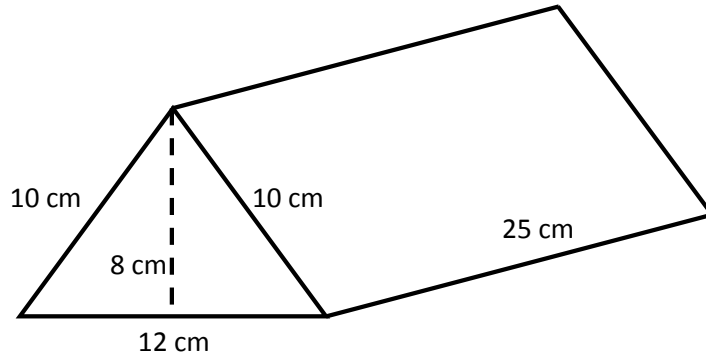➢ Area of two triangular surface + Area of three rectangular surfaces

Example 1

Find the total surface area of the cylinder

7 cm

16 cm

$$= 2\pi rh + 2\pi r^2$$
$$= 2 \times \frac{22}{7} \times 7 \times 16 + 2 \times \frac{22}{7} \times 7 \times 7$$
$$= 704 + 308$$
$$\equiv 1012\ cm^2$$

Example 2

Find the surface area of triangular-prism


Surface area of two triangular faces $= 2 \times \frac{1}{2} \times 12 \times 8$

Surface area of rectangular surfaces $= 10 \times 25 + 10 \times 25 + 12 \times 25$

Total surface area $= 800 + 96 = 896 \ cm^2$

Exercise

1. Find the total surface area of a cylinder of height 20 cm and cross-sectional radius 14 cm.
2. A cylindrical container without a lid has cross-sectional diameter 21cm and height 35 cm. Find the outer surface area of the container.
3. Area of a curved surface of a cylinder is 990 cm². Find the cross-sectional radius of the cylinder when its height is 15 cm.

4. Find the total surface area of the following figures.
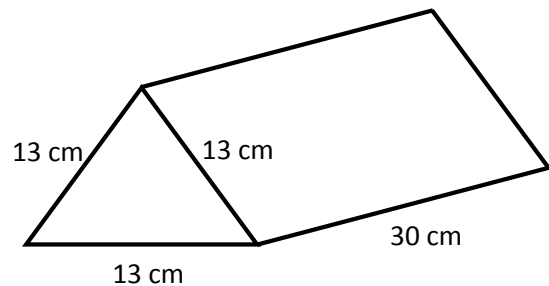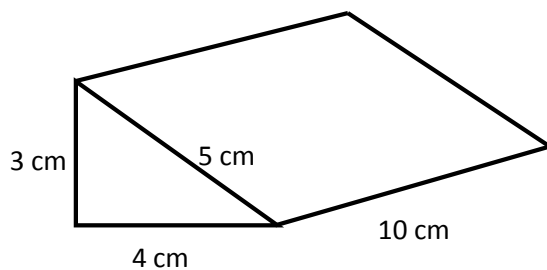
5. Sum of the areas of three rectangular faces of a triangular prism which has equilateral triangle cross-section is 1008 cm². Find the side length of the triangular face when the length of the prism is 28 cm.