



**Provincial Education Department Sabaragamuwa – Week School**

**Subject: Mathematics**

**9<sup>th</sup> week - 20<sup>th</sup>-26<sup>th</sup> Dec, 2020**

**Grade: 10**

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**Surface Area of Solid Objects**

**Surface area of right cylinder**

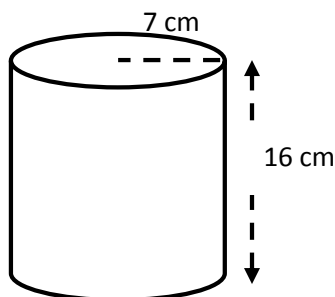
- Curved surface area of right cylinder with height “h” and radius of cross section “r” =  $2\pi rh$
- Area of two circular faces =  $\pi r^2 \times 2$
- Area of total surface area =  $2\pi rh + 2\pi r^2$

**Surface area of triangular prism**

- Area of two triangular surface + Area of three rectangular surfaces

**Example 1**

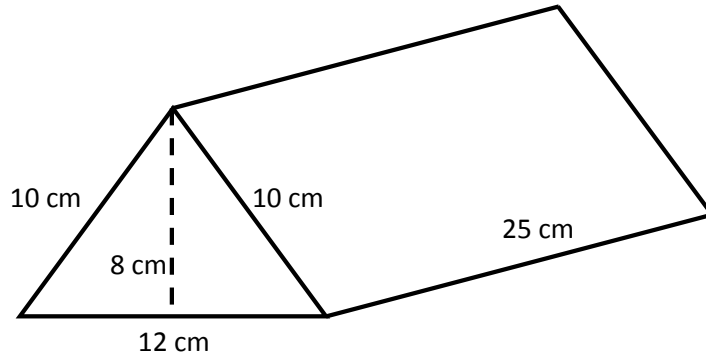
Find the total surface area of the cylinder



$$\begin{aligned} &= 2\pi rh + 2\pi r^2 \\ &= 2 \times \frac{22}{7} \times 7 \times 16 + 2 \times \frac{22}{7} \times 7 \times 7 \\ &= 704 + 308 \\ &= \underline{\underline{1012 \text{ cm}^2}} \end{aligned}$$

### Example 2

Find the surface area of triangular-prism



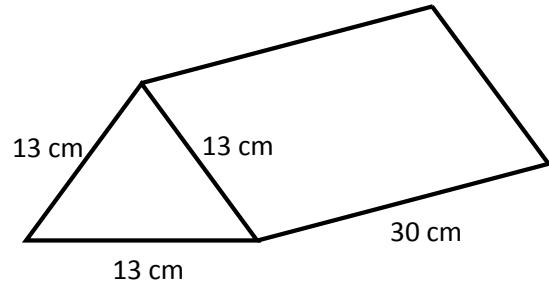
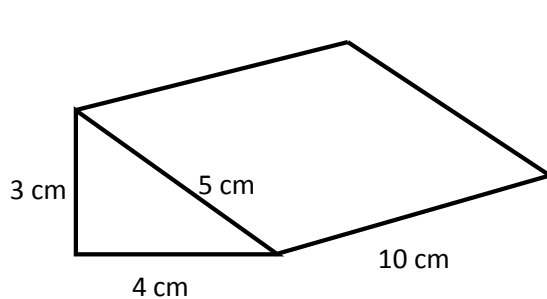
$$\text{Surface area of two triangular faces} = 2 \times \frac{1}{2} \times 12 \times 8$$

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

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

### 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 21 cm and height 35 cm. Find the outer surface area of the container.
3. Area of a curved surface of a cylinder is  $990 \text{ cm}^2$ . 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  $1008 \text{ cm}^2$ . Find the side length of the triangular face when the length of the prism is 28 cm.