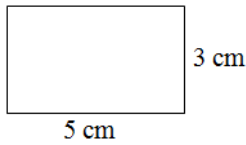


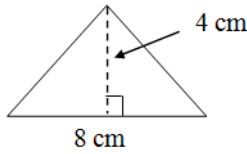
5.3 – SURFACE AREA OF A PRISM

Review: Area of a Rectangle and Triangle

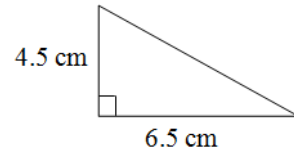
Calculate the area of each shape.



$$A = l \times w = 5 \times 3 = 15 \text{ cm}^2$$



$$A = \frac{1}{2} b \times h = \frac{1}{2} \times 8 \times 4 = 16 \text{ cm}^2$$

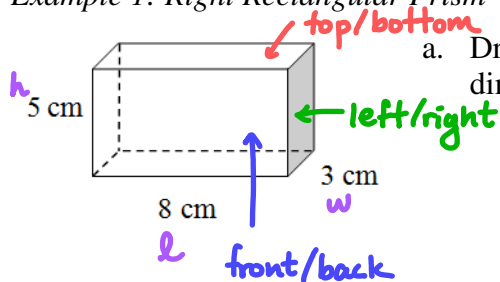


$$A = \frac{1}{2} b \times h = \frac{1}{2} \times (6.5) \times (4.5) = 14.625 \text{ cm}^2$$

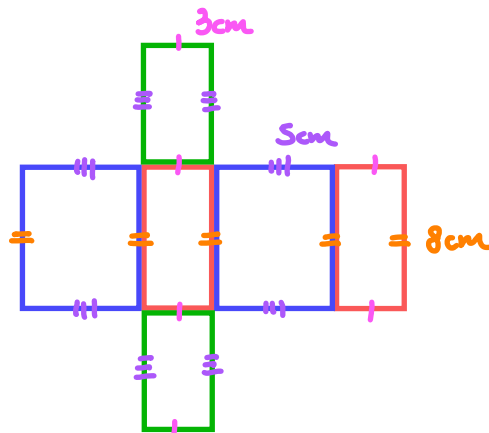
Surface Area – the sum of the area of each surface of a prism or a cylinder (3D objects in general.)

Calculating Surface Area

Example 1: Right Rectangular Prism



a. Draw a net of this right rectangular prism and label the dimensions.



b. Calculate the surface area of the prism.

$$2 \times l \times h = 2 \times 8 \times 5 = 80 \text{ cm}^2$$

$$2 \times l \times w = 2 \times 8 \times 3 = 48 \text{ cm}^2$$

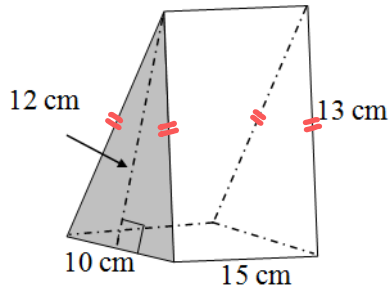
$$2 \times w \times h = 2 \times 3 \times 5 = 30 \text{ cm}^2$$

$$S.A. = 80 + 48 + 30 = 158 \text{ cm}^2$$

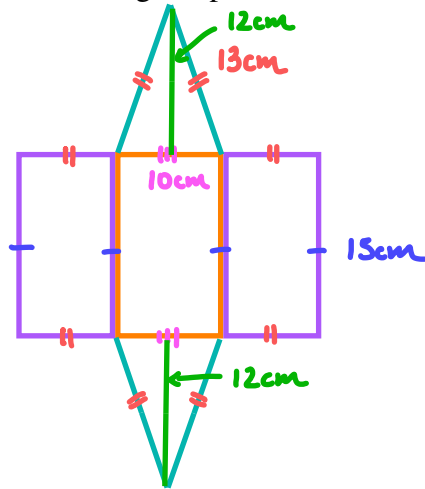
$$S.A. = 2lw + 2lh + 2wh$$

↑ rectangular prism

Example 2: Triangular Prism



a. Draw a net of this triangular prism.



b. Calculate the surface area of the prism.

2 triangles

$$A = 2 \left(\frac{1}{2} \times b \times h \right)$$

$$= \cancel{2} \times \cancel{\frac{1}{2}} \times 10 \times 12 = 120 \text{ cm}^2$$

1 combined rectangle

$$A = l \times w$$

$$= 15 \times (13 + 10 + 13)$$

$$= 15 \times 36 = 540 \text{ cm}^2$$

$$\text{S.A.} = 120 + 540$$

$$= 660 \text{ cm}^2$$

Example 3: Calculate the surface area of this triangular prism to the nearest tenth of a square metre.

