

10-2B Surface Area of Prisms

*units squared!!
m², in², ft², etc.

Surface Area - sum of the areas of all the surfaces (faces) of a 3-D figure

For Rectangular Prisms

$$SA = 2B + Ph$$

$$SA = 2lw + (2l + 2w)h$$

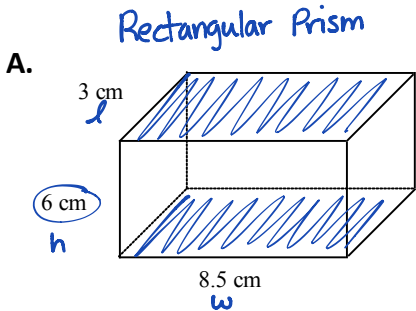
B: area of base shape
P: perimeter of base shape
h: height of prism

For Triangular Prisms

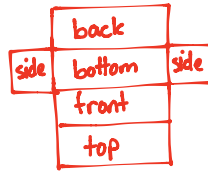
$$SA = 2B + Ph$$

$$SA = 2\left(\frac{bh_a}{2}\right) + Ph$$

Ex. 1: Find the surface area of each prism. Round to the nearest tenth if necessary.



Net: 2-D picture of the surfaces



$$B = lw \quad P = 2l + 2w$$

$$B = 3(8.5) \quad P = 2(3) + 2(8.5)$$

$$B = 25.5 \quad P = 6 + 17$$

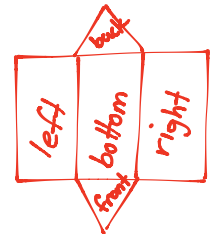
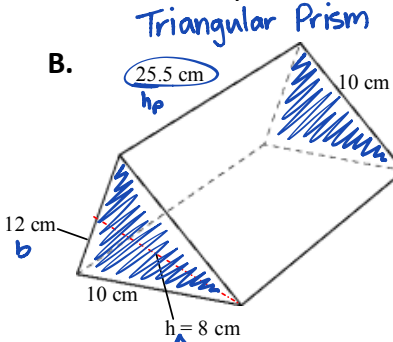
$$P = 23$$

$$SA = 2B + Ph$$

$$SA = 2(25.5) + (23)(6)$$

$$SA = 51 + 138$$

$SA = 189 \text{ cm}^2$



$$B = \frac{bh_a}{2} \quad P = 10 + 12 + 10$$

$$B = \frac{(12)(8)}{2} \quad P = 32$$

$$B = \frac{96}{2}$$

$$B = 48$$

$$SA = 2B + Ph$$

$$SA = 2(48) + (32)(10)$$

$$SA = 96 + 320$$

$SA = 416 \text{ cm}^2$

OR

$$SA = 2\left(\frac{bh_a}{2}\right) + Ph$$

$$SA = (12)(8) + (10 + 12 + 10)(10)$$

$$SA = 96 + 320$$

$SA = 416 \text{ cm}^2$

OR

$$SA = 2(lw) + (2l + 2w)h$$

$$SA = 2(3)(8.5) + (2 \cdot 3 + 2 \cdot 8.5)(6)$$

$$SA = 51 + (6 + 17)(6)$$

$$SA = 51 + (23)(6)$$

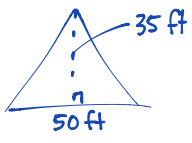
$$SA = 51 + 138$$

$SA = 189 \text{ cm}^2$

KEY TIPS:

- 1) Circle (height of figure)
- 2) Shade (bases)
- 3) Name (figure using the shape of the base)
- 4) Write basic formula for 3-D figure
- 5) Write specific formula (according to base)
- 6) Substitute values
- 7) Calculate
- 8) Check units/rounding

3.



7.

