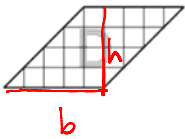
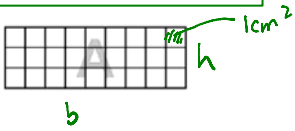


5.3 Surface Area of a Prism

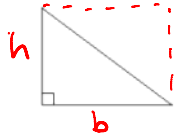
Finding the sum of all the areas of each face on a 3-D object is called calculating the surface area.

Area of a rectangle and parallelogram:

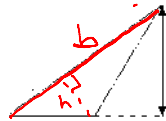
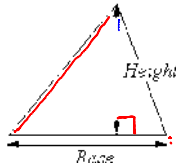
Area = length x width



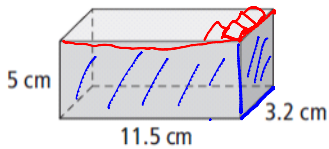
Area of a triangle: $\frac{\text{base} \times \text{height}}{2}$



$\frac{b \times h}{2}$ or $\frac{1}{2}bh$



Ex. Calculate the surface area to the nearest tenth of a square centimetre.



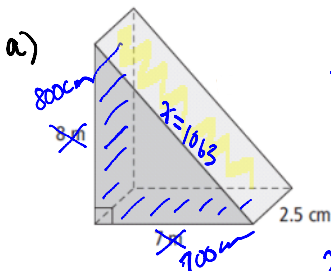
$$2(11.5 \times 5) + 2(11.5 \times 3.2) + 2(3.2 \times 5)$$

$$\underline{115} + \underline{73.6} + \underline{32}$$

220.6 cm²

← square units
must have appropriate units

Ex. Calculate the surface area of the triangular prism.



$$2 \left(\frac{1000 \times 800}{2} \right) + (800 \times 2.5) + (700 \times 2.5) + (1063 \times 2.5)$$

$$560000 + 2000 + 1750 + 2657.5$$

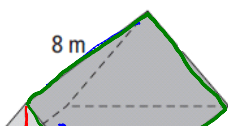
$$\underline{566408 \text{ cm}^2}$$

$$x^2 = 800^2 + 700^2$$

$$x = \sqrt{800^2 + 700^2}$$

$$x = 1063$$

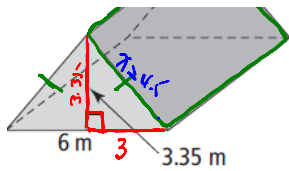
b)



$$2 \left(\frac{6 \times 3.5}{2} \right) + (6 \times 8) + 2(8 \times 4.5)$$

$$21 + 48 + 72$$

- A) 140.05 m²
- B) 164.1 m²
- C) 360 m²



$$20.1 + 48 + 72$$

$$\underline{140.1 \text{ m}^2}$$

- c) 360 m^2
- d) none of the above.

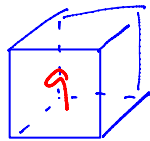
$$x = \sqrt{3^2 + 3.35^2}$$

$$x = 4.5$$

If the above triangular prism was a greenhouse with a dirt floor, how much would it cost to build if glass costs \$65 per square meter.

$$140.1 \text{ m}^2 - 48 \text{ m}^2 \text{ (Floor)} = 92.1 \text{ m}^2 \times 65 = \underline{\$5986.50}$$

Ex. Calculate the surface area of cube if each face has an area of 9 cm^2 .



$$9 \times 6 = 54 \text{ cm}^2$$

The sum of the edges of a cube is 84 cm, what is the SA?

12 edges

$$84 \div 12 = 7 \text{ edge length}$$

$$7^2 = 49 \text{ cm}^2 / \text{face}$$

$$49 \times 6 = \underline{294 \text{ cm}^2}$$

Assignment p180 #3,5-8,10-13,15