warm up.

Key

**Math 8: Volume**

~~**The volume of a right rectangular prism can be determined by using the formula:**~~

**7.1 & 7.2 Volume of a Prism**

The volume of a right cylinder or right prism can be determined by multiplying the area of the base by the height of the cylinder or prism

Volume = area of base × height

Example: determine the volume of the cylinder

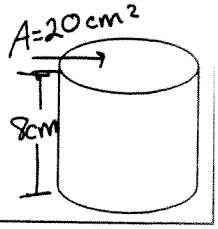
$A = 20cm^2$

$h = 8cm$

Area base × height

$= 20cm^2 \times 8cm$

$= 160cm^3$




Changing the orientation of a 3-D object does not affect its volume.

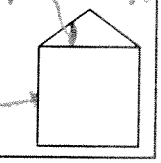
Volume = area of base × height of prism

Example: determine the volume of the triangular prism

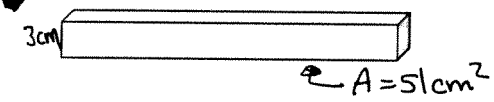
$V = A \times h$

$= 17cm^2 \times 10cm$

$= 170cm^3$




What's the volume?

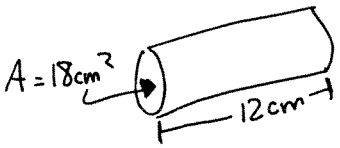



$V = A \times h$

$= 51cm^2 \times 3cm$

$= 153cm^3$

What's the volume?




$V = A \times l$

$= 18cm^2 \times 12cm$

$= 216cm^3$

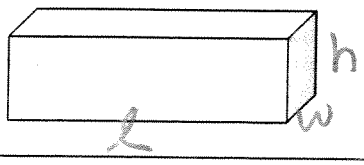
A water trough is in the shape of a right triangular prism with base area of $1250cm^2$ and a height of 100cm. How much water can be put in before it overflows?

$V = A \times h$

$= 1250cm^2 \times 100cm$

$= 125000cm^3$

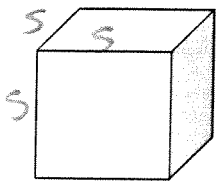
The volume of a right rectangular prism can be determined by using the formula: $V = l \times w \times h$




The volume of cube can be determined using the formula:

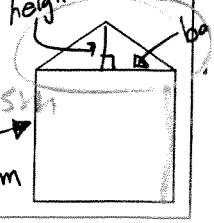
$V = s \times s \times s$

$V = s^3$




The volume of right triangular prism can be determined using the formula:

$V = (\text{base of } \Delta \times \text{height}) \div 2 \times \text{height of prism}$



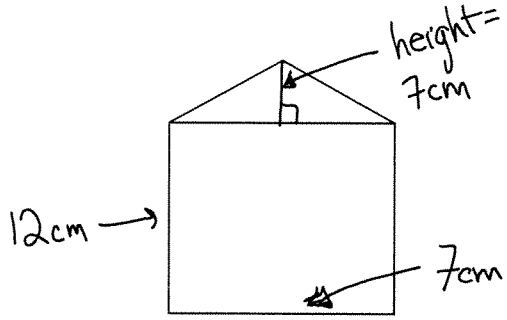
**Determine the volume:**

$V = A \text{ of } \triangle \times h$

$= [(7\text{cm} \times 7\text{cm}) \div 2] \times 12\text{cm}$

$= 24.5\text{cm}^2 \times 12\text{cm}$

$= 294\text{cm}^3$




What is the volume of the rectangular prism:

$l = 2$ m, $w = 2$ cm, $h = 10$m

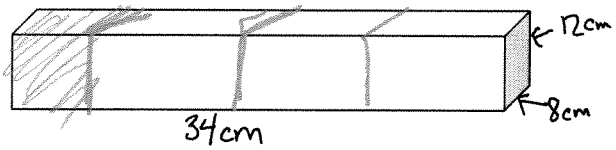
$V = l \times w \times h$

$= 2\text{cm} \times 2\text{cm} \times 10\text{cm}$

$= 40\text{cm}^3$

Determine the volume the contents of the right prism

¼ full




$V = l \times w \times h$

$= 34\text{cm} \times 8\text{cm} \times 12\text{cm}$

$= 3,264\text{cm}^3$

$\frac{1}{4} \times 3264 = 816\text{cm}^3$