

Measurement: Notes

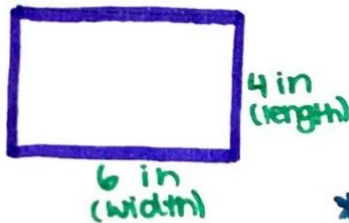
Area:

Area: the amount of space (usually in unit²) that is occupied by a shape

Finding the area of...

A rectangle: Area = length $\times$ width
 $A = l \times w$

Example:



$$A = 4 \times 6$$

$$A = 24$$

$$\text{Area} = 24 \text{ in}^2$$

* Remember to put area in unit² b/c it is the amount of square units the shape is taking

A triangle: Area = $\frac{\text{base} \times \text{height}}{2}$ $\leftarrow$ from the highest point of triangle to the base

$$A = \frac{1}{2}bh \text{ or } A = \frac{bh}{2}$$

Example:



$$A = \frac{1}{2}(3)(7)$$

$$A = \frac{1}{2}(21)$$

$$A = 10.5$$

$$\text{Area} = 10.5 \text{ cm}^2$$

* always units²

Perimeter:

Perimeter: the length (measured in a certain unit) of the border of a shape

Finding the perimeter of...

A rectangle: $2(\text{length}) + 2(\text{width})$

or
 $\text{length} + \text{length} + \text{width} + \text{width}$

Example:

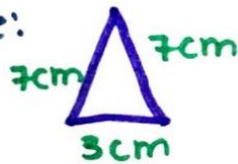


$$\begin{array}{r} 2(6) + 2(3) \\ 12 + 6 \\ \hline 18 \\ 6 + 6 + 3 + 3 \\ \hline 18 \end{array}$$

perimeter: 18 in ← always write the unit

A triangle: length of all 3 sides added up together

Example:



$$\begin{array}{r} 7 + 7 + 3 \\ 17 \end{array}$$

perimeter: 17 cm

Volume:

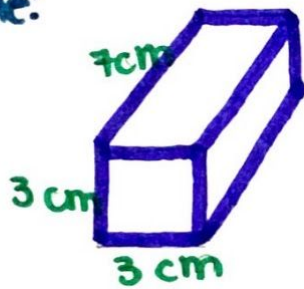
Volume: the amount of space (measured in cubic units) that a 3 dimensional shape takes up

Finding the volume of a rectangular prism:

$$\text{Volume} = \text{length} \times \text{width} \times \text{height}$$

$$V = lwh$$

Example:



$$V = 7 \times 3 \times 3$$

$$V = 42$$

$$\text{volume} = 42 \text{ cm}^3$$

Always have volume measurements in units³
b/c volume measures the amount of cubic space a shape takes up



Circle Measurements:

Finding a circle's...

Perimeter: $2\pi r$ or πd
 r = radius ($1/2$ of a circle's height)
 d = diameter (a circle's height)

Example:



$$\begin{aligned}P &= \pi d \\P &= 3.14(6) \\P &= 18.84 \\ \text{Perimeter} &= 18.84 \text{ in}\end{aligned}$$

* it is a good idea to use 3.14 or $\frac{22}{7}$ for the value of π

Area: πr^2
 r = radius

Example:



$$\begin{aligned}A &= \pi 3^2 \\A &= 3.14(9) \\A &= 28.26 \\ \text{Area} &= 28.26 \text{ in}^2\end{aligned}$$