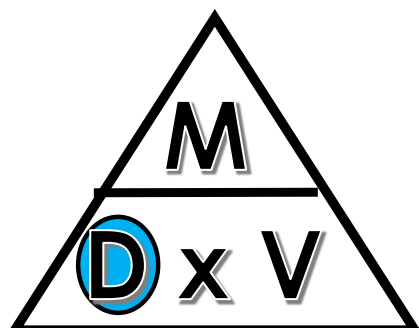


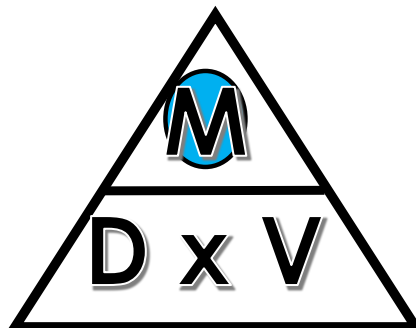
# I DENSITY Cheats

**Sample Problem:**

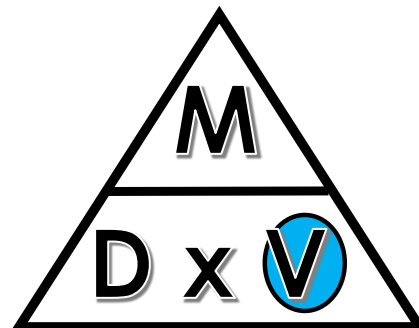
Find the density of a liquid that has a mass of 18g and a volume of 6mL

**Density Formula****Mass Formula****Volume Formula**

$$D = \frac{M}{V}$$



$$M = D \times V$$



$$V = \frac{M}{D}$$

Steps to solving for **DENSITY**:

1. Write the equation

$$D = \frac{M}{V}$$

2. Plug in the numbers

$$D = \frac{18g}{6mL}$$

3. Solve (divide the top by the bottom)

$$18 \div 6 = 3$$

4. Bring down your units!

$$D = \frac{18g}{6mL}$$

$$D = 3 \frac{g}{mL}$$

Steps to solving for **MASS**:

1. Write the equation

$$M = D \times V$$

2. Plug in the numbers

$$M = 3 \frac{g}{mL} \times 6mL$$

3. Solve (multiply the numbers)

$$3 \times 6 = 18$$

4. Cancel and bring down your units!

$$M = 3 \frac{g}{\cancel{mL}} \times 6\cancel{mL}$$

$$M = 18g$$

Steps to solving for **VOLUME**:

1. Write the equation

$$V = \frac{M}{D}$$

2. Plug in the numbers

$$V = \frac{18g}{3 \frac{g}{mL}}$$

3. Solve (divide the top by the bottom)

$$18 \div 3 = 6$$

4. Cancel and bring down your units!

$$V = \frac{18\cancel{g}}{3 \frac{\cancel{g}}{mL}}$$

$$V = 6mL$$

## Some useful definitions:

1. Mass – Amount of matter in an object.
2. Volume – Amount of space occupied by an object.
3. Density – The amount of mass in a given object.
4. Weight – The effect of gravitational force on mass.

## Units for Mass and Volume:

**Units for Mass:**

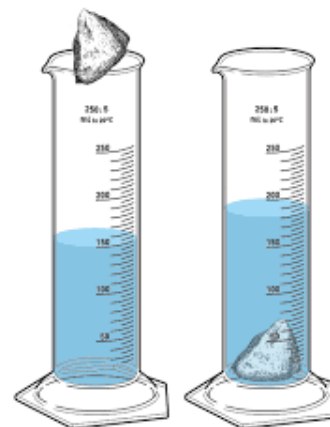
**Grams (g)**

**Units for Volume:**

**mL for liquids, cm<sup>3</sup> for solids**

## How to measure volume:

Liquid	Regular Shaped Solid	Irregularly Shaped Solid
Measure amount of liquid with a graduated cylinder.	Use a ruler to measure sides: $V = l \times w \times h$	Use a graduated cylinder to measure the volume before and adding the object. $V = V_{\text{after}} - V_{\text{before}}$



## Sink or Float?

### Sink:

- Density greater than 1.0 g/cm<sup>3</sup> or g/mL

### Float:

- Density less than 1.0 g/cm<sup>3</sup> or g/mL

**Density of  
Water =  
1.0 g/mL**