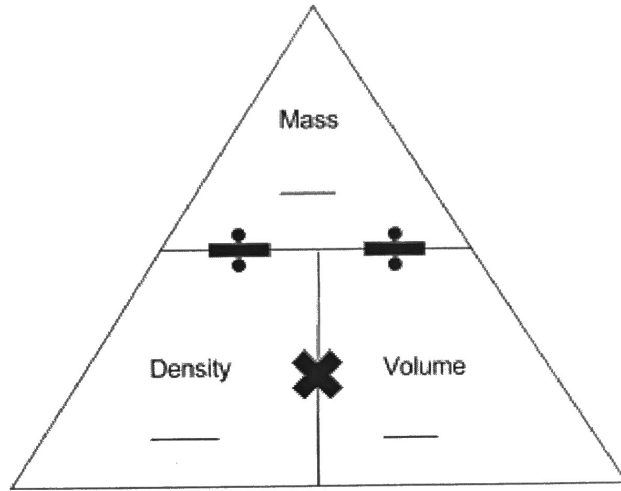


**DENSITY TEST REVIEW**  
Use the Density Triangle to help you!



1. Calculate the density for each of the following objects. Circle the object that is the MOST dense:

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

	<u>A</u>	<u>B</u>	<u>C</u>
<b>Mass</b>	36 g	24 g	12 g
<b>Volume</b>	6 cm <sup>3</sup>	4 cm <sup>3</sup>	2 cm <sup>3</sup>

$D = \frac{36}{6} = 6$      $D = \frac{24}{4} = 6$      $D = \frac{12}{2} = 6$  ← All the same!

2. What is the density of a cube that measures 1 centimeter on each side and has a mass of 2 grams?
- Step 1: Calculate VOLUME ( $V = S^3$ )  $V = 1 \cdot 1 \cdot 1 = 1 \text{ cm}^3$
  - Step 2: Calculate DENSITY ( $D = M/V$ )  $D = \frac{2g}{1 \text{ cm}^3} = 2 \text{ g/cm}^3$
  - Will the cube FLOAT or SINK? (circle one)

3. The Titanic sank because it weighed more (more or less) than the water it displaced.

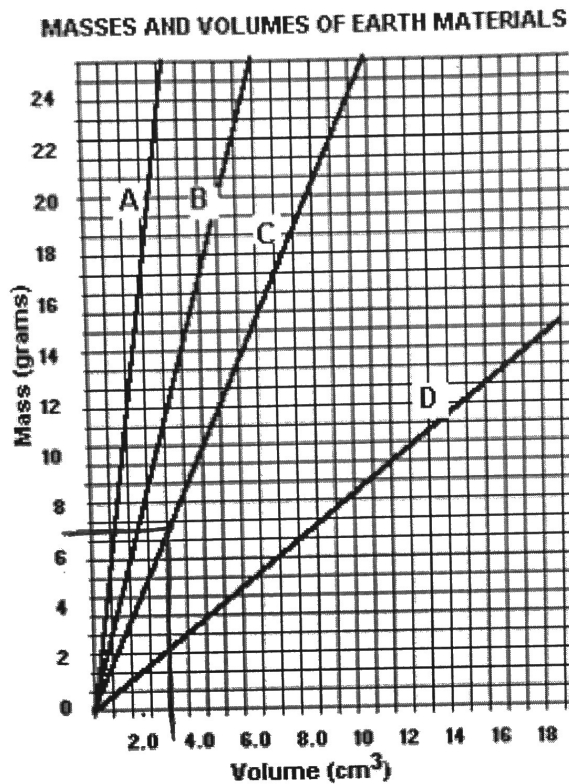
4. Heavy ships like aircraft carriers float because their densities are less than (greater than or less than) 1 g/ml. An example of a possible density for an aircraft carrier could be 0.6g/ml (10g/ml or 0.6g/ml)

5. Calculate the density for each of the following objects. Circle the 2 objects that have the SAME density:

<u>A</u>	<u>B</u>	<u>C</u>
Mass = 4 g	Mass = 6 g	Mass = 8 g
Volume = 2 cm <sup>3</sup>	Volume = 6 cm <sup>3</sup>	Volume = 4 cm <sup>3</sup>
$D = \frac{M}{V}$ $D = \frac{4}{2}$ $D = 2 \text{ g/cm}^3$	$D = \frac{M}{V}$ $D = \frac{6}{6}$ $D = 1 \text{ g/cm}^3$	$D = \frac{M}{V}$ $D = \frac{8}{4}$ $D = 2 \text{ g/cm}^3$

6. Heat causes air to become less (more or less) dense. Therefore, as the Earth's surface gets warmer, the density of air will decrease (increase or decrease).

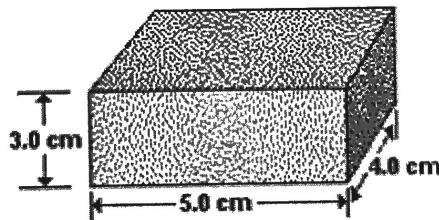
Use the following graph for questions 7 & 8.



7. Look at the line for sample C. When it's volume is 3.0 cm<sup>3</sup>, what is its mass? 7g

8. Which material has the greatest density? A How do you know? it has the steepest line → when volume is 1cm<sup>3</sup>, mass is 9 grams for a density of 9g/cm<sup>3</sup>

9. Calculate the density of the following rectangular prism if it's mass is 120 grams:  
(Remember:  $D = M/V$ )



Step 1: Calculate VOLUME ( $V = lwh$ )

F:  $V = l \cdot w \cdot h$

S:  $V = 3 \cdot 5 \cdot 4$

A:  $V = 60 \text{ cm}^3$

Step 2: Calculate DENSITY ( $D = M/V$ )

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

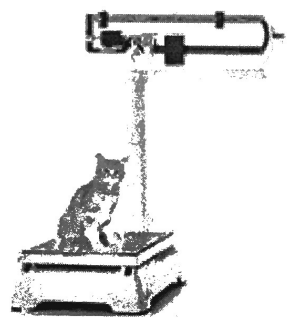
S:  $D = \frac{120}{60}$

A:  $D = 2 \text{ g/cm}^3$

$D = 2 \text{ g/cm}^3$

mass  
volume

10. Using the units of milliliters for volume and grams for mass, what would the appropriate units be for density? grams / (per) milliliters
11. If you wanted to separate particles of salt and sand, the easiest way to do it would be to pour water into the mixture and then filter it. Particles of salt will absorb into the water and particles of sand will get caught in the filter.
12. Mass is a measure of the amount (amount or weight) of matter.
13. If you had a mixture of iron shavings, pencil shavings, pieces of rubber, and dust, what tool could you use to separate only the IRON shavings? magnet
14. You could determine the volume of a rock by filling a graduated cylinder with water, measuring the starting amount of water, then dropping the rock into it and measuring how much water has been displaced.
15. In the following picture, what is being measured? mass (volume or mass)?



16. Looking at the three containers below, which all contain the same type of liquid. Form a hypothesis on what type of liquid is in the containers: water  
What is the DENSITY of the liquid you guessed: 1.0g/mL

