Name_____
Block_____
Date_____

DENSITY OF WATER

INTRODUCTION:

The density of a substance is defined as the mass divided by the volume: **d=m / v.**
Density is a physical property of a substance that does not depend on the amount of material present and is therefore called an **intensive property**.
In this experiment, you will find the density of water for three different volumes.

MATERIALS:

50 - mL graduated cylinder
Balance
Dropper
Distilled water

PROCEDURE:

1. Find the mass of an empty, dry 50 - mL graduated cylinder to the nearest 0.01 g and record the mass on the **data table**.

2. Add exactly **10.0 mL** of water to the cylinder. **Remember**, the **bottom** of the meniscus should just be touching the 10.0 mL line. **[Hint: Add water up to about the 9 mL mark and use a dropper to reach the 10.0 mL mark.]**

3. Find the mass of the cylinder and 10 mL of water to the nearest 0.01 mL. Record the mass on the **data table**.

4. Repeat steps 2 and 3 with **30.0 mL** of water.

5. Repeat steps 2 and 3 with **50.0 mL** of water.

DATA TABLE:

Mass of empty graduated cylinder. _____ g

Mass of graduated cylinder and 10.0 mL of water. _____ g

Mass of graduated cylinder and 30.0 mL of water. _____ g

Mass of graduated cylinder and 50.0 mL of water. _____ g

CALCULATIONS:

6. Find the mass of the 10.0 mL sample of water. This is the **mass of the cylinder and 10.0 mL sample - the mass of the cylinder.**

Mass of the 10.0 mL sample = _____ g

7. Calculate the density of the 10.0 mL sample. Remember: density = mass / volume. The unit for density will be $^{g}/_{mL}$.

Density for 10.0 mL sample = _____ $^{g}/_{mL}$

8. Now repeat steps 6 and 7 for the 30.0 mL and 50.0 ml samples.

Mass of the 30.0 mL sample = _____ g

Density for 30.0 mL sample = _____ $^{g}/_{mL}$

Mass of the 50.0 mL sample = _____ g

Density for 50.0 mL sample = _____ $^{g}/_{mL}$

The density of water is **1.0** $^{g}/_{mL}$.

Write a paragraph and tell how your three answers compare to the accepted value?