Density Detective Questions Answer Key

1. Explain how you arrived at your answer of the identity of the unknown.

The mass and volume of the sample were identified. The density equation (D=m/V) was used to calculate the density. The value of density obtained was closest to the value of the density for liquid X.

2. Define density in your own words.

The amount of mass per volume; a ratio of mass to volume

3. Would the density of the liquid have changed if you used a different volume of liquid? Why?

No. Density is a property that remains the same for an object no matter how much of it is present. Density is a ratio or measurements.

4. Object A has a density of 1.2 g/mL. Object B has a density of 0.9 g/mL. Which object would float in water (Density 1 g/mL)? Which object would sink?

Float: Object B, Sink: Object A

5. A liquid of volume 9 mL weighs 12.6 g. What is the density of the liquid?

1.4 g/mL

6. Rearrange the density equation to solve for mass.

Mass = Density X Volume

7. A glass of juice has a density of 1.05 g/mL. How much does 3.5 mL of this juice weigh?

3.675 g