

Goal • Check your understanding of Chapter 8.

What to Do

Circle the letter of the best answer.

- Which of the following is correct?
 - Displacement is a mass-to-volume ratio.
 - Displacement is measured with a balance.
 - Displacement is the amount of matter in a substance.
 - Displacement is the amount of space that an object takes up when placed in a fluid.
- Which of the following units are used to express the density of liquids?
 - g/cm^3
 - g/mL
 - mL
 - mL/cm^3
- Which of the following statements is NOT true?
 - Gases are less dense than liquids.
 - Gases are less dense than solids.
 - Liquids are less dense than solids.
 - Solids are less dense than gases.
- Which of the following statements is true?
 - Attractive forces among particles of a gas are stronger than those between liquid particles.
 - Attractive forces among particles of a liquid are stronger than those between solid particles.
 - In solids, particles cannot be easily pushed apart.
 - Liquid particles have more space between them than gas particles.
- As the thermal energy of a substance increases, its particles move farther apart. As a result, which of the following occurs?
 - Density decreases.
 - Density does not change.
 - Density increases.
 - Mass increases.

Match the Term on the left with the best Descriptor on the right.
Each Descriptor may be used only once.

| Term | Descriptor |
|----------------------------------|--|
| <u>D</u> 6. displacement | A. attraction of particles for each other |
| <u>C</u> 7. mass | B. does not change |
| <u>F</u> 8. mass-to-volume ratio | C . the amount of matter in a substance |
| <u>E</u> 9. volume | D . the amount of space an object takes up when placed in a fluid |
| | E . the amount of space occupied by a substance |
| | F . used to calculate density |

Short Answer Questions

10. Calculate the density of the following substances:

(a) 40 cm³ of brown sugar with a mass of 62.8 g

$$D = \frac{m}{V} = \frac{62.8g}{40cm^3} = 1.57g/cm^3$$

(b) 135 g of aluminum that has a volume of 50 cm³

$$D = \frac{m}{V} = \frac{135g}{50cm^3} = 2.7g/cm^3$$

(c) 12 mL of oil with a mass of 10.5 g

$$D = \frac{m}{V} = \frac{10.5g}{12mL} = 0.86g/mL$$