Name _____

Solids, Liquids, and Gases - Oh My Answer Key

1. $D = \frac{60}{100} = 0.6\ \text{g/cm}^3$ → Less than 1.0 → **Floats**.
2. $D = \frac{46}{50} = 0.92\ \text{g/mL}$ → **Floats** on water.
3. $m = 7.9 \times 3 = 23.7\ \text{g}$
4. $D = \frac{1.3}{1000} = 0.0013\ \text{g/mL}$
5. $D = \frac{18}{19.6} \approx 0.92\ \text{g/cm}^3$ → Less than 1.0 → **Floats**.
   Ice floats because solid water is less dense than liquid water.
6. Ranking (least → greatest):
   Helium (0.00018) < Water (1.0) < Aluminum (2.7)
7. $D = \frac{0.9}{5000} = 0.00018\ \text{g/mL}$
   → Helium is less dense than air (~0.0013 g/mL), so **it rises**.
8. $D_{\text{water}} = 1.0\ \text{g/mL},\ D_{\text{oil}} = 0.9\ \text{g/mL}$ → **Oil floats** on water.
9. True **most of the time**, but not always. Liquids are usually denser than gases because their particles are closer together — but some unusual gases (like compressed gases) can exceed certain liquid densities under extreme pressure.
10. **Regular soda (1.03 g/mL)** → sinks; **Diet soda (0.97 g/mL)** → floats.
    The sugar makes regular soda slightly denser than water.