

Density Detectives: Working with Lab Data Answer Key**1.**

a)

- Trial 1: $56.8/7.1 = 8.00 \text{ g/cm}^3$
- Trial 2: $56.5/7.0 = 8.07 \text{ g/cm}^3$
- Trial 3: $57.0/7.2 = 7.92 \text{ g/cm}^3$

b) Average = $(8.00 + 8.07 + 7.92)/3 = 8.00 \text{ g/cm}^3$

2. Volume = $4.00 \times 2.50 \times 1.20 = 12.0 \text{ cm}^3$;

$D = 90.0/12.0 = 7.50 \text{ g/cm}^3$

3. Mass of liquid = $235.5 - 125.0 = 110.5 \text{ g}$;

$D = 110.5/100.0 = 1.11 \text{ g/mL}$

4.

- A: $54 / 20 = 2.7$
- B: $27 / 10 = 2.7$
- C: $80 / 10 = 8.0$

→ Samples A and B are aluminum-like.

5. $D = 122.0/45.0 = 2.71 \text{ g/mL}$

6. Percent error = $\frac{|8.9-8.96|}{8.96} \times 100 = 0.67\%$