

## Practice Test 1 Key

- 1 a
- 2 a
- 3 c
- 4 d
- 5 d
- 6 d
- 7 a
- 8 a
- 9 c
- 10 c
- 11 d
- 12 a
- 13 a
- 14 a
- 15 d
- 16 b
- 17 c
- 18 a
- 19 c
- 20 c

$$1. 6.59 \times 10^8 \text{ ng} \left( \frac{10^{-9} \text{ g}}{1 \text{ ng}} \right) \left( \frac{1 \text{ kg}}{10^3 \text{ g}} \right)$$

$$= 6.59 \times 10^{-4} \text{ kg}$$

$$2. \text{ Sample 1: } \text{C}:\text{Cl} = \frac{38.9 \text{ g}}{448 \text{ g}} = .0868$$

$$\text{Sample 2: } \text{C}:\text{Cl} = \frac{14.8 \text{ g}}{134 \text{ g}} = .110$$

No, if the samples are of the same substance, the Law states the ratios of masses should be the same.

$$3. 6.02 \times 10^{23} \text{ H atoms} \left( \frac{212 \text{ pm}}{1 \text{ atom}} \right) \left( \frac{10^{-12} \text{ m}}{1 \text{ pm}} \right) \left( \frac{1 \text{ km}}{10^3 \text{ m}} \right)$$

$$= 1.28 \times 10^{11} \text{ km}$$

$$4. \frac{258 \text{ gal}}{3 \text{ sf}} \left( \frac{3.7854 \text{ L}}{1 \text{ gal}} \right) \left( \frac{10^3 \text{ cm}^3}{1 \text{ L}} \right) \left( \frac{1 \text{ in}^3}{(2.54)^3 \text{ cm}^3} \right) \left( \frac{1 \text{ ft}^3}{12^3 \text{ in}^3} \right) \rightarrow$$

$$\rightarrow \left( \frac{64.4 \text{ lbs}}{1 \text{ ft}^3} \right) = \boxed{2.22 \times 10^3 \text{ lbs}}$$

$$5. \text{ Isotope 3 \% Abundance} = 100 - 78.99 - 10.00 = \boxed{11.01 \%}$$

$$24.31 \text{ amu} = (.7899 \times 23.9850 \text{ amu}) + (.1000 \times 24.9858 \text{ amu}) + (.1101 \times c)$$

$$\boxed{c = 26.0279 \text{ amu}}$$