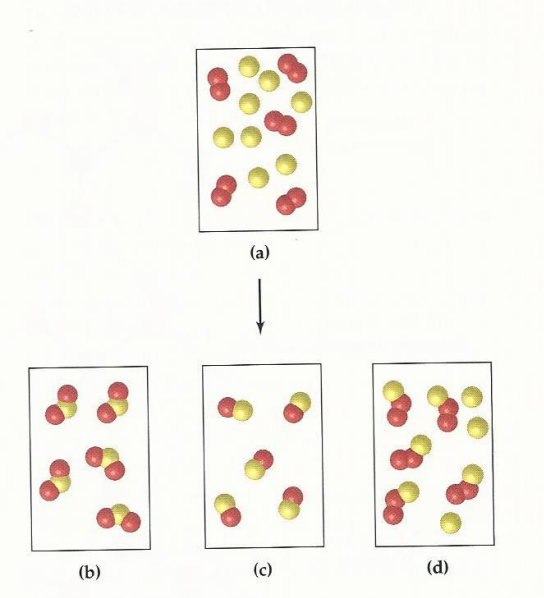
REVIEW QUESTIONS
Test 1

1. Normal human blood has a cholesterol concentration of about 200 mg/100 mL. How much total cholesterol (in g) does a person have if the normal blood volume in the body is 5 L?

2. Sulfuric acid is produced in larger amounts than any other chemical–9.536×10^{10} lb in 1995. What is the volume of this amount (in L) if density of sulfuric acid is 1.84 g/cm^3?
(1 lb = 453.6 g)

3. If the mixture of substances in drawing (a) represents the mixture before reaction, which of the drawings (b)–(d) represent the mixture after reaction has completed. Provide an explanation for our choice.



4. Tellerium, a group 6 element, forms the oxoanions TeO_4^{2-} and TeO_3^{2-}. What are the likely names for these anions? Which other group 6 oxoanions are these similar to?

5. An average cup of coffee contains about 125 mg of caffeine, $C_8H_{10}N_4O_2$. How many molecules of caffeine are in a cup of coffee?

6. A 30.03-g sample compound containing C, H and O undergoes combustion analysis and yields 43.5 g of CO_2 and 23.5 g of water. What is the empirical formula of the compound?

7. Germanium has 5 naturally occurring isotopes, listed below. Determine the relative intensity of each isotope in the mass spectrum of Ge.

Isotope	***Relative Abundance***
^{70}Ge	20.5%
^{72}Ge	27.4%
^{73}Ge	7.8%
^{74}Ge	36.5%
^{76}Ge	7.8%

8. A copper rod has a length of 9.85 cm and a radius of 1.05 cm. How many atoms of copper are in this rod? (Density of Cu = 8.96 g/cm^3

ANSWERS

1) 10 g

2) 2.35×10^{10} L

3) No answer provided

4) No answer provided

5) 3.88×10^{20} molecules

6) $C_3H_8O_3$

7)

Isotope	***Relative Intensity***
^{70}Ge	56.2%
^{72}Ge	75.1%
^{73}Ge	21.4%
^{74}Ge	100%
^{76}Ge	21.4%

8) 2.90×10^{24} atom