Name _____ Section _____ Date _____

Chapter 5: Standard Review Worksheet

1. How does uncertainty enter into measurements? How is uncertainty indicated in scientific measurements?

2. Why must a unit be included with a measurement?

3. Give an everyday example of how you might use dimensional analysis to solve a simple problem.

4. For each of the following, make the indicated conversion:
   a. 0.0004321×10^4 to standard scientific notation
   b. 5.241×10^2 to ordinary decimal notation

5. For each of the following, make the indicated conversion:
   a. 16.0 L to fluid ounces
   b. 5.25 L to gallons
   c. 8.25 m to inches
   d. 4.25 kg to pounds
   e. 4.21 in. to centimeters

6. Evaluate each of the following mathematical expressions, being sure to express the answer to the correct number of significant figures:
   a. $[(7.815 + 2.01)(4.5)]/(1.9001)$
   b. $(1.67 \times 10^{-9})(1.1 \times 10^{-4})$
   c. $(4.02 \times 10^{-4})(2.91 \times 10^{3})/(9.102 \times 10^{-1})$
   d. $(1.04 \times 10^{2} + 2.1 \times 10^{1})/(4.51 \times 10^{3})$
   e. $(1.51 \times 10^{-3})^2/(1.074 \times 10^{-7})$
   f. $(1.89 \times 10^{2})/[(7.01 \times 10^{-3})(4.1433 \times 10^{4})]$

7. Make the indicated temperature conversions:
   a. –50.1°C to Fahrenheit degrees
   b. –30.7°F to Celsius degrees

8. Given the following mass, volume, and density information, calculate the missing quantity:
   a. Mass = ? g; volume = 124.1 mL; density = 0.821 g/mL
   b. Mass = ? g; volume = 4.51 L; density = 1.15 g/cm^3