Chapter 3 Problem II (+1) Name _____

5. Determine the number of significant figures in each measurement.
   a) 0.05730 meter _____
   b) 8765 meters _____
   c) 0.00073 meter _____
   d) 40.007 meters _____

7. Round each measurement to three significant figures. Write your answers in scientific notation.
   a) 87.073 _____
   b) 4.3621×10^{8} _____
   c) 0.01552 _____
   d) 9009 _____
   e) 1.7777×10^{-3} _____
   f) 629.55 _____

8. Round each measurement in Problem 7 to one significant figure. Write your answers in scientific notation.
   a)
   b)
   c)
   d)
   e)
   f)

9. Perform each operation. Give your answers to the correct number of significant figures.
   a) 61.2 + 9.35 + 8.6 = _____
   b) 9.44 – 2.11 = _____
   c) 1.36 + 10.17 = _____
   d) 34.61 – 17.3 = _____

11. Solve each problem. Give your answers to the correct number of significant figures and in scientific notation.
   a) 8.3 x 2.22 = _____
   b) 8432 / 12.5 = _____
   c) 35.2 x (1 / 60) = _____

12. Calculate the volume of a warehouse that has inside dimensions of 22.4 meters by 11.3 meters by 5.2 meters.

36. Identify the following as quantitative or qualitative:
   a) A flame is hot. _____
   b) A candle has a mass of 90 g. _____

c) Wax is soft _____
d) A candle's height decreases 4.2 cm/hr _____

38. Under what circumstances could a series of measurements of the same quantity be precise but inaccurate? _____

39. Three students made multiple weighing of a copper cylinder, each using a different balance. The correct mass of the cylinder has been previously determined to be 47.32 g. Describe the accuracy and precision of each student's measurenents.

	Lissa	Lamont	Leigh Anne
Weighing 1	47.13	47.45	47.95
Weighing 2	47.94	47.39	47.91
Weighing 3	46.83	47.42	47.89
Weighing 4	47.47	47.41	47.93

Lissa: _____
Lamont: _____
Leigh Anne: _____

40. Comment on the accuracy and precision of these basketball free-throw shooters.
a) 99 of 100 shots are made. _____
b) 99 of 100 shots hit the front of the rim and bounce off. _____
c) 33 of 100 shots are made; the rest miss. _____

46. How are the error and the percent error of a measurement calculated?

47. Why is the percent error of a measurement always positive?

48. A student estimated the volume of a liquid in a beaker as 200 mL. When she poured the liquid into a graduated cylinder, she measured the volume as 208 mL. What is the percent error of the estimated volume from the beaker, taking the measurement in the graduated cylinder as the accepted value?
% error =

49. Water with a mass of 35.4 g is added to an empty flask with a mass of 87.432 g. The mass of the flask and the water is 146.72 g after a rubber stopper is added. Express the mass of the stopper to the correct number of significant figures.