Chapter 3 Practice #2 Name _____

1. Explain why the following statements are true, describing which numbers are significant, and which are not.

A. The measurement 90.7 g has three significant figures.

B. The measurement 0.0742 L has three significant figures.

C. The measurement 18200 m has three significant figures.

D. The measurement 18.200 seconds has five significant figures.

2. Write the number of significant figures in the following measurements.

_____ A. 2.708	_____ H. 0.00480	_____ O. 4.678×10^{22}
_____ B. 50.007	_____ I. 540300	_____ P. 3.67×10^{-4}
_____ C. 0.00045	_____ J. 287.345	_____ Q. 0.000000875
_____ D. 589000	_____ K. 16.3050	_____ R. 3322.008
_____ E. 50800	_____ L. 3000010	_____ S. 4506.003
_____ F. 789.006	_____ M. 0.00458	_____ T. 56.000
_____ G. 507.7800	_____ N. 6.38×10^{9}	_____ U. 30.230

3. Round 80.45 to

a) 3 significant figures b) 2 significant figures c) 1. significant figure

4. Round the following numbers to three significant figures

_____ A. 50.63	_____ E. .004536	_____ I. 129.8
_____ B. 1823	_____ F. 4.5636×10^{-3}	_____ J. 1.2046
_____ C. 1.823×10^{3}	_____ G. 12.98	_____ K. 120.46
_____ D. 08129	_____ H. 13.02	_____ L. 12.04

5. Matching: Match each description in Column B to the correct term in Column A.

Column A	**Column B**
_____ 1. accuracy	a. measure of how close a series of measurements are to one another
_____ 2. measurement	b. measure of how close a measurement comes to the actual value
_____ 3. precision	c. digits in a measurement that are known plus one that is estimated
_____ 4. scientific notation	d. a value determined in the laboratory e. a quantity that has both a number and a unit
_____ 5. experimental value	f. a method of expressing numbers as a product of a coefficient and a power of 10.
_____ 6. significant figures	

6. Use your calculator to answer the following, using the correct significant figures

A. $2.345 + 6.487 =$

B. $2.7 \times 10^4 + 3.67 \times 10^4 =$

C. $8.4 \times 10^{-4} + 6.89 \times 10^{-4} =$

D. $456 \times 21 =$

E. $\frac{124.07}{5.3} =$

F. $68.439 - 54.1 =$

G. $7.8 \times 10^6 - 2.4 \times 10^5 =$

H. $2.7 \times 10^{-4} - 3.67 \times 10^{-5} =$

I. $3200 \times 460 =$

J. $\frac{6.74034 \times 10^5}{4.302 \times 10^{-3}} =$

7. Use your calculator to answer the following. Write your answer in scientific notation.

A. $6{,}000{,}000 \times 800{,}000 =$

B. $(6 \times 10^6) \times (8 \times 10^5) =$

C. $\frac{(6 \times 10^6)}{(8 \times 10^8)} =$

D. $\frac{6{,}000{,}000}{800{,}000} =$

E. $\begin{array}{r} 6{,}000{,}000 \\ +800{,}000 \\ \hline \end{array}$

F. $\frac{(6 \times 10^6)}{+(8 \times 10^8)} =$

G. $\begin{array}{r} 6{,}200{,}000 \\ -\ 800{,}000 \\ \hline \end{array}$

H. $\frac{(6 \times 10^6)}{-(8 \times 10^8)} =$

8. Which of these rulers could have been used to measure the following distances?

_____ A. 2.7 cm

_____ B. 3 cm

_____ C. 2.72

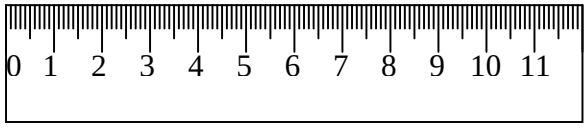
_____ D. 10.1

_____ E. 11.2

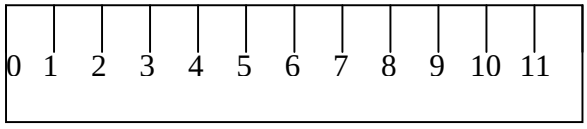
_____ F. 6.72

_____ G. 10.74

I.



II.



III.