CHEMISTRY : MEASUREMENT PRACTICE II

A. Determine the number of significant digits in the following numbers:

_____1) 5600

_____2) 45.00

_____3) 105.0

_____4) 0.00565

_____5) 0.005400

_____6) 89.543

_____7) 5, 056, 300

_____8) 95.0540

_____9) 93,000,000

B. Perform the indicated operations and express your answer to the correct number of significant digits:

_____10) (6.92)(7.9)

_____11) (8.245)(9.00)

_____12) (4.46)/(6.52)

_____13) (9.825)/(8.20)

_____14) (8.95) (9.162)/(4.25) (6.3)

C. Perform the indicated operations and express your answer to the correct number of significant digits:

_____15) 5.50 + 0.528 + 9.2

_____16) 420 + 8900 + 620

_____17) 0.00526 - 0.52

_____18) 820.0 + 19.5 + 6

_____19) 4,285.75 - 520.1 - 386.255

_____20) (0.526) (895) + 20.8

D. How many significant digits are represented by each of the following measurements?

_____a. 21.35 cm

_____b. 200,000 L

_____c. 8.750 g

_____d. 0.02 km

_____e. 121.2000 g

_____f. 0.000009 s

_____g. 0.000823 kg

_____h. 38002 cm

_____i. 1.0370×10^{-7} m

_____j. 0.0910 m

E. Add or subtract as indicated and state the answer with the correct number of significant digits.

_____a. 85.26 cm + 4.6 cm

_____b. 1.07 m + 0.607 m

_____c. 186.4 g - 57.83 g

_____d. 60.08 s - 12.2 s

_____e. 72.60 m + 0.0950 m

F. Multiply or divide as indicated and state the answer with the correct number of significant digits.

_____a. (5.5 m) (4.22 m)

_____b. (0.0167 km) (8.525 km)

_____c. 2.6 kg ÷ 9.42 m^3

_____d. 0.632 m ÷ 3.8 s

_____e. 0.0045 mm^2 ÷ 0.90 mm

G. Fill in the table below as indicated. The first example is done for you.

number	no. of SDs	round to 3 SDs	round to 2 SDs
		standard not.	standard not.
123.45	5	123	120
100.00			
1 446 000			
8 356.90			
0.000 396			
40.318			
1.0000e+6			
3.9980e-4			
0.002 300			
300 000 000			