Honors Chem WKS
Significant Figures in Calculations

NAME Answer Key
Period _____ **Date** _____

A. Rounding

Round each of the following to 3 significant figures.		Round each of the following to 4 significant figures.	
1) 98.473 m	98.5 m	2) 4.59812 mm	4.598 mm
3) 0.0007632 1 mm	0.000763 mm	4) 0.0094249 g	0.009425 g
5) 57.048 g	57.0 g	6) 20.498 kg	20.50 kg
7) 12.15 g	12.2 g	8) 6.82035×10^{3} L	6.820×10^{3} L
9) 7.49830×10^{-4} mm	7.50×10^{-4} mm	10) 45,698 km (be careful!)	4.570×10^{4} km
11) 874.5 °C	875 °C	12) 0.31995 mg	0.3200 mg

B. Calculations

Give the results of the following problems. First show the full answer in your calculator, then round to the correct number of significant figures. Be sure to include the proper units! Units can be multiplied or divided, but in addition and subtraction all units and exponents must be the same and the answer is in the same units. Indicate how you are rounding (# of SF or decimal place).

Ex. 85.8 mm × 207.9 mm = **17837.82 mm² → 17300 mm² (3 SF)**

13) 12.8 m × 5.2 m = 6656 m^2 → 67 m^2 (2 sig. figs.)

14) 100 pencils × 8.57 g/pencil = 857 g (3 sig. figs.)
count

15) 0.00005 cm × 538 cm^2 = 0.0269 cm^3 → 0.03 cm^3 (1 sig. fig.)

16) 6008 cm^3 ÷ 8.724 cm = 688.6749198 cm^2 → 688.7 cm^2 (4 sig. figs.)

17) 72 cm ÷ 7 rods = 10.28571429 cm/rod → 10. cm/rod or 1.0×10^{1} cm/rod (2 sig figs.)
count

18) 600 g ÷ 38 mL = 15.78947368 g/mL → 20 g/mL (1 sig fig)

19) 357.89 g + 0.002 g = 357.892 g → 357.89 g (addition: hundredths place)

20) 17.95 m + 32.42 m + 50 m = 100.37 m → 1.0×10^{2} m (tens place)

21) 5.5 mL + 3.7 mL + 2.97 mL = 12.17 ml → 12.2 mL (tenths place)

22) 84.675 cm – 3 cm = 81.675 cm → 82 cm (ones place)

23) 75 °C – 2.55 °C = 72.45°C → 72 °C (ones place)

24) 10 g – 9.9 g = 0.1 g → 0 g (tens place!)