Name:_____ Date:_____ Block: _____

Metric Conversions, Measure Sig Figs, Count Sig Figs, & Round Sig Figs HW

1. Convert each of the following quantities to the required unit.

   a. 5.2 cm of magnesium to 52 mm of magnesium (Bigger 10^{-2}; 10^{-3})

   b. 0.049 kg of sulfur to 49 g of sulfur (Bigger 10^{3}; 10^{0})

   c. 1.60 mL of ethanol to 1600 µL of ethanol (Bigger 10^{-3}; 10^{-6})

   d. 0.020 kg of tin to 20000 mg of tin (Bigger 10^{3}; 10^{-3})

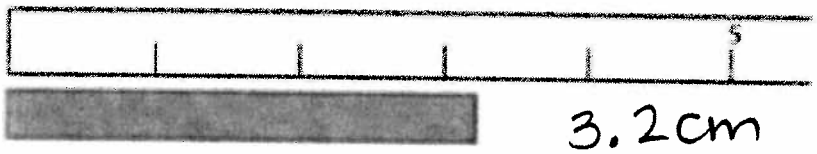
   e. 3 kL of saline solution to 3000 L of saline solution (Bigger 10^{3}; 10^{0})

2. A chemistry teacher needs to determine what quantity of sodium hydroxide to order. If each student will use 130 g and there are 150 students, how many kilograms of sodium hydroxide should the teacher order?

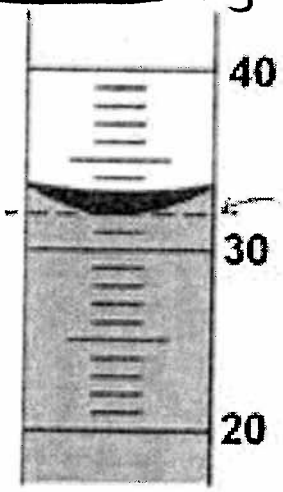
   130g x 150 students = 19500 g to 19.5 Kg

   Smaller 10^{0} 10^{3}

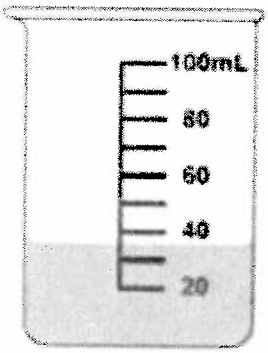
3. Measure the following:



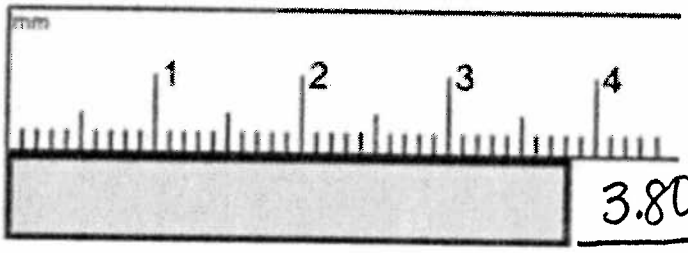
3.2cm



32.0m



35mL



3.80cm

4. Determine the number of significant figures in the following measurements.

a. 640 cm^3 2 sig figs

b. 200.0 mL 4 sig figs

c. 0.5200 g 4 sig figs

d. 1.005 kg 4 sig figs

e. 10 000 L 1 sig fig

f. 20.900 cm 5 sig figs

g. 0.000 000 56 g/L 2 sig figs

h. 0.040 02 kg/m^3 4 sig figs

i. 790 001 cm^2 6 sig figs

j. 665.000 kg•m/s^2 6 sig figs

5. Round the following quantities to the specified number of significant figures.

a. 5 487 129 m to three significant figures 5 490 000 m

b. 0.013 479 265 mL to six significant figures 0.0134793 mL

c. 31947.972 cm^2 to four significant figure 31950 cm^2

d. 192.6739 m^2 to five significant figures 192.67 m^2

e. 786.9164 cm to two significant figures 790 cm

f. 389 277 600 J to six significant figures 389,278,000 J

g. 225 834.762 cm^3 to seven significant figures 225 834.8 cm^3