

Name \_\_\_\_\_

## Metric Conversions and Dimensional Analysis #1

Complete the following metric conversions:

- 1)  $6.32\text{m} = ? \text{cm}$       632cm      4)  $0.0032 \text{ kL} = ? \text{ dL}$       32dL  
2)  $18.9 \text{ mL} = ? \text{ cL}$       1.89cL      5)  $6.42 \times 10^{14} \text{cg} = ? \text{ kg}$        $6.42 \times 10^9 \text{kg}$   
3)  $9.38 \times 10^{-8} \text{g} = ? \text{ mg}$        $9.38 \times 10^{-5} \text{mg}$       6)  $18,578 \text{ mm} = ? \text{ m}$       18.578m

Complete the following metric-U.S. conversions: (1in=2.54cm 1L=1.06q 1kg=2.2lbs)

- 7)  $78.53\text{ft} = ? \text{ cm}$       2394cm      10)  $0.054\text{oz} = ? \text{ g}$       1.5g  
8)  $58.2\text{cups} = ? \text{ dL}$       137dL      11)  $96.3 \text{ miles} = ? \text{ km}$       155km  
9)  $2.56 \times 10^{14} \text{mm} = ? \text{ miles}$        $1.59 \times 10^8 \text{miles}$       12)  $16.5 \text{ kL} = ? \text{ gallons}$       4370gal

A little tougher....

- 13)  $3.00 \times 10^8 \text{m/s} = ? \text{ miles/hr}$        $6.71 \times 10^8 \text{ miles/hr}$   
14)  $59.82 \text{ oz./pint} = ? \text{ g/mL}$        $3.603 \text{ g/mL}$   
15)  $25.3 \text{in}^3 = ? \text{ dm}^3$        $0.415 \text{ dm}^3$

Word Problems:

16) An experiment you are performing requires 1.7g of copper. You will obtain the copper from a spool that measures 933cm long. Each centimeter of copper has a mass of 0.034g. The mass of the entire spool is 31.72g. The density of copper is  $8.96 \text{g/cm}^3$ . How would you obtain exactly 1.7g of copper for the experiment if you had only a metric ruler available for measuring?

Cut a 50.cm piece

17) You have been working at a fast food restaurant. Each hour you wrap 184 hamburgers. You work 5 8-hour days a week and are paid \$840 every two weeks. How many hamburgers will you have to wrap to make your first one million dollars? How many years without vacation will it take?

$1.75 \times 10^7$  hamburgers      45.8 years

18) Calculate how many total days you spend in Chemistry class if each class is 85min long and the semester is 90 days? (If you were in class nonstop, how many days would it be?)

5.3 days

19) How many km in a marathon (26.2miles)?

42.2 km

20) You are in Paris and you want to buy some peaches for lunch. The sign in the fruit stand indicates that peaches are 1.53 euros per kilogram. Given that there are approximately 0.67 euros to the dollar, calculate what a pound of peaches will cost in dollars?

\$1.04/lb