

## Dimensional Analysis Wkst #1

Name \_\_\_\_\_

Complete with the correct conversions (the first one is done for you)

$$\underline{1 \text{ Mm} = 1 \times 10^6 \text{ m}}$$

$$\underline{\hspace{2cm}} = 1 \times 10^{-12} \text{ g}$$

$$1 \text{ mL} = \underline{\hspace{2cm}}$$

$$1 \text{ cg} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} = 1 \times 10^3 \text{ g}$$

$$1 \text{ dm} = \underline{\hspace{2cm}}$$

$$1 \text{ }\mu\text{L} = \underline{\hspace{2cm}}$$

$$1 \text{ daL} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} = 1 \times 10^{-9} \text{ m}$$

$$\underline{\hspace{2cm}} = 1 \times 10^2 \text{ L}$$

Set up these conversions and calculate the answer. Remember to focus on your units and make sure they cancel out! The first one has been done as an example.

$$(x) \text{ nm} = \frac{5.64 \times 10^{-6} \text{ m}}{1 \times 10^{-9} \text{ m}} \left| \frac{1 \text{ nm}}{1 \times 10^{-9} \text{ m}} \right. = 5.64 \times 10^3 \text{ nm}$$

$$(x) \text{ L} = 1024 \text{ mL}$$

$$(x) \text{ kg} = 4.32 \times 10^4 \text{ ng}$$

$$(x) \text{ cm} = 1.32 \times 10^7 \text{ Mm}$$

$$(x) \text{ Gg} = 9.543 \times 10^{18} \text{ pg}$$

$$(x) \text{ }\mu\text{m} = 732 \text{ dm}$$

$$(x) \text{ kL} = 0.056 \text{ dL}$$

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### Helpful conversion factors:

12 donuts = 1 dozen donuts

365 days = 1 year

16 ounces = 1 pound

2000 pounds = 1 ton

12 inches = 1 foot

24 hours = 1 day

60 minutes = 1 hour

1 minute = 60 seconds

1 mile = 5280 feet

1 in = 2.54 cm

1 lb = 454 g

### Convert the following (show your work and use correct sig figs!):

How many miles are in 795690 inches?

How many grams are in  $2.7 \times 10^3$  ounces?

Calculate the number of raspberry-filled donuts in 17.6 dozen donuts.

Brian the Air Force pilot is 1.90 meters tall. How tall is he in inches?

Cheryl the horse person (Brian's sister) is 5.0 feet tall. How tall is she in cm?

This class period is 1.5 hours long. How long is this in seconds? You **must** set this problem up with dimensional analysis.

A 2008 Honda Accord weighs approximately 1.75 tons. How much does this car weigh in ounces?

Create 2 of your own conversion problems. Write the word problems here:

Ok, now solve them.