

Name _____

Period **KEY****Metric Dimensional Analysis Worksheet**

1. 65 kg to g

$$65 \text{ kg} \cdot \frac{1000 \text{ g}}{1 \text{ kg}} = 65000 \text{ g}$$

2. 35.28 mL to L

$$35.28 \text{ mL} \cdot \frac{1 \text{ L}}{1000 \text{ mL}} = .03528 \text{ L}$$

3. 2390 g to kg

$$2390 \text{ g} \cdot \frac{1 \text{ kg}}{1000 \text{ g}} = 2.39 \text{ kg}$$

4. 750 micrograms to g

$$750 \mu\text{g} \cdot \frac{1 \text{ g}}{10^6 \mu\text{g}} = 7.5 \times 10^{-4} \text{ g}$$

5. 2.00 L to mL

$$2.00 \text{ L} \cdot \frac{1000 \text{ mL}}{1 \text{ L}} = 2.0 \times 10^3 \text{ mL}$$

6. 23.8 g to kg

$$23.8 \text{ g} \cdot \frac{1 \text{ kg}}{1000 \text{ g}} = .0238 \text{ kg}$$

7. 0.75 kg to milligrams

$$.75 \text{ kg} \cdot \frac{1000 \text{ mg}}{1 \text{ kg}} = 750 \text{ mg}$$

8. 1500 millimeters to km

$$1500 \text{ mm} \cdot \frac{1 \text{ km}}{10^6 \text{ mm}} = .0015 \text{ km}$$

9. 0.52 km to meters

$$.52 \text{ km} \cdot \frac{1000 \text{ m}}{1 \text{ km}} = 520 \text{ m}$$

10. 0.25 megameters to cm

$$.25 \text{ Mm} \cdot \frac{1 \text{ cm}}{10^{-8} \text{ Mm}} = 2.5 \times 10^7 \text{ cm}$$

11. 2.77 kg to mg

$$2.77 \text{ kg} \cdot \frac{10^6 \text{ mg}}{1 \text{ kg}} = 2.77 \times 10^6 \text{ mg}$$

12. 45.6 microliters to megaliters

$$45.6 \mu\text{L} \cdot \frac{1 \text{ ML}}{10^{12} \mu\text{L}} = 4.56 \times 10^{-11} \text{ ML}$$

Name _____

Comet Chemistry
Factor Label Worksheet

On the planet Rigel 12, Rigellians have developed a system of measurements called S.U., or Systems Universal. Here is the conversion table for the measurements of distance:

- 1 gleem = 27 blops
- 1 blop = 34 riddigs
- 1 riddig = 42 chirks
- 1 chirke = 9 fuggles
- 10 fuggles = 52 hippers
- 2.5 hippers = 1.2 zookas
- 1 zooka = 7 wenzels
- 1 wenzel = diameter of 1 larval stage weevip

Using this information you are to answer the following questions (and of course - SHOW ALL WORK). Use ONLY the Factor Label Method to solve each problem.

1. How many gleems in one riddig?

$$1 \text{ Riddig} \cdot \frac{1 \text{ blop}}{34 \text{ Riddigs}} \cdot \frac{1 \text{ gleem}}{27 \text{ blops}} = 1.09 \times 10^{-3} \text{ gleems}$$

2. If you have 7 gleems, how many blops do you have?

$$7 \text{ gleems} \cdot \frac{27 \text{ blops}}{1 \text{ gleem}} = 189 \text{ blops}$$

3. How many zookas in one fuggle?

$$\frac{1.2 \text{ zookas}}{2.5 \text{ hippers}} \cdot \frac{52 \text{ hippers}}{10 \text{ Fuggles}} = 2.5 \text{ zookas} / \text{Fuggle}$$

4. If you have 7 chirks, how many riddigs do you have?

$$7 \text{ chirks} \cdot \frac{1 \text{ riddig}}{42 \text{ Chirkes}} = .17 \text{ riddigs}$$

5. The distance from Rigel 12 to Vulcan is 3,000 gleems. How many chirks is it from Rigel 12 to Vulcan?

$$3000 \text{ gleems} \cdot \frac{27 \text{ blops}}{1 \text{ gleem}} \cdot \frac{34 \text{ riddigs}}{1 \text{ blop}} \cdot \frac{42 \text{ chirks}}{1 \text{ riddig}} = 1.16 \times 10^8 \text{ Chirks}$$

6. The size of the Nubus Galaxy is only 2.7×10^9 fuggles. How many blops is this?

$$2.7 \times 10^9 \text{ fuggles} \cdot \frac{1 \text{ chirke}}{9 \text{ fuggles}} \cdot \frac{1 \text{ riddig}}{42 \text{ chirks}} \cdot \frac{1 \text{ blop}}{34 \text{ riddigs}} = 2.16 \times 10^5 \text{ blops}$$

7. How many larval stage weevips would you have to line up side by side to measure 42 wenzels?

$$\frac{1 \text{ wenzel}}{\text{dia. 1 weevip}} = 42 \text{ weevips}$$