Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class period: \_\_\_\_

![MC900130271[2]]()

**Unit: Dimensional Analysis Answer Key**

**“One, Two, and More Step Problems” – WS #2**

# **Directions:** Use dimensional analysis to perform the following calculations. Show all work and include units. Use correct sig figs!

# How many g are equal to 345.7 mg?

$$\frac{345.7mg}{1}x\frac{1g}{1000mg}=0.3457g$$

# Change 0.00765 kL into mL.

$$\frac{0.00765KL}{1}x\frac{1000L}{1KL}x\frac{1000mL}{1L}=7650ml$$

# How many seconds are there in 2.5 days?

$$\frac{2.5days}{1}x\frac{24hrs}{1 day}x\frac{60min}{1hr}x\frac{60sec}{1min}=216,000≈220,000sec$$

# How many minutes are there in 1.000 week?

$$\frac{1000wk}{1}x\frac{7 days}{1wk}x\frac{24hrs}{1 day}x\frac{60mins}{1hr}=10,080mins$$

1. How many seconds long is this chemistry class if it lasts 40.0 minutes?

$$\frac{40.0min}{1}x\frac{60sec}{1min}=2.40x10^{3}sec$$

# A chemistry student’s height is measured at 68.5 inches. How tall is the student in cm?

$$\frac{68.5in}{1}x\frac{2.54cm}{1 in}=173.99cm≈174cm$$

# This same chemistry student has a weight of 155 lbs. What is the student’s weight in grams? (16oz=1lb, 1 oz = 28.34 g)

$$\frac{155lbs}{1}x\frac{16oz}{1lb}x\frac{28.34g}{1oz}=70,300g$$

# A homerun in a baseball game was measured at 450 feet. How many meters is this equal to?

$$\frac{450ft}{1}x\frac{12in}{1ft}x\frac{2.54cm}{1 in}x\frac{1m}{100cm}=137≈140m$$

1. Mount Everest is approximately 8,000 meters high. How many miles high is Mount Everest?

$$\frac{8000m}{1}x\frac{100cm}{1m}x\frac{1 in}{2.54cm}x\frac{1ft}{12in}x\frac{1mi}{5280ft}=4.970≈5 miles$$

1. A 5.0 km race is scheduled for this weekend. How many miles is this race?

$$\frac{5.0km}{1}x\frac{1000m}{1km}x\frac{100cm}{1m}x\frac{1in}{2.54cm}x\frac{1ft}{12in}x\frac{1mi}{5280ft}=3.1 mi$$