

# Guided Practice: Density, Sig Figs, & Conversions

CLASS SET!

**Directions:** Use your knowledge about density, sig figs, and unit conversion bridges to answer the following questions:

## Part One: Sig Fig and Unit Conversion Review

How many significant figures are there in each number?

1. 709.80
2. 0.00920
3. 100,000
4. 408,000,300
5.  $6.02 \times 10^{23}$

Convert the following units. **SHOW YOUR WORK USING BRIDGES!!** The conversion factors are given to you. **Be sure your answer is written with the correct number of sig figs!**

1. 456.5cm = ? inches (1 inch = 2.54 cm)
2. How many mL is 5.0 teaspoons of salt? (1 tsp = 5.0 mL)
3. How many grams are in 59.3 kg? (1kg = 1,000g)
4. How many kilometers is a marathon run (26 miles)? (1.0 miles = 1.61km)
5. How many days is 214,798 minutes? (You should know the conversion factors! You will need to use more than one bridge!)

## Part Two: Density Practice Problems

Solve the following density problems using the formula  $d=m/v$ .

1. You have a piece of aluminum that occupies a volume of 30.0 mL and has a mass of 81.0 grams. What is its density? Show your work. (Don't forget sig figs!)
2. The density of mercury is 13.6 g/mL. If you have a sample of mercury with a mass of 306.0 grams, how many mL of mercury do you have? Show your work. (Don't forget sig figs!)
3. Archeologists discover a silver crown in a ancient tomb. When they place the crown in a tub of water it displaces 238.1 mL of water. The density of silver is 10.50 g/mL. Assuming the crown is really silver, how much does the crown weight? Show your work. (Don't forget sig figs!)
4. A friend has found a ring on the ground and thinks that it may be pure gold, which has a density of 19.3 g/mL. In order to find out she takes its volume measurement, 10.5 mL, and its mass, 150.1 grams. What is the density of the ring? Is the ring real gold?
5. You've found a piece of zinc metal. The density of zinc is 7.1 g/mL. You measured the mass to be 275.7 grams. How much zinc (in  $\text{cm}^3$ ) did you find?

## Part Three: Measurement Review

Use your knowledge (or your notes) to fill in the blanks on the following chart:

Property	Definition	Base Unit	Instrument(s)
Length			
Mass			
Volume			
Time			
Temperature			

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