

- Recall & recognize the SI units for length, volume, mass, time, and temperature.
- Be able to use the density equation to calculate the density of a sample given its mass and volume.
- Recognize when a number is written in correct scientific notation and convert numbers from decimal notation to scientific notation and vice-versa.
- Recognize and explain the difference between accuracy and precision in measurements.
- Calculate the percent error in a measurement given the experimental and accepted values using the formula in Chart B in the information packet.
- Determine the number of significant figures in a number or measurement and round all calculations to the correct number of sig. figs.
- Be able to perform common dimensional analysis problems given the needed relationships.
- Explain how the metric prefixes modify the base units, and be able to use the conversion factors in Chart A in the information packet to convert between units.
- Describe a graph, independent and dependent variables, direct and inverse relationships, determine the slope ($\Delta y/\Delta x$) and interpret its meaning.

Mastering Problems pg. 50-51 #52, 53, 64, 65, 66, 68, 71, 72, 73, 74, 80 (a-f), 81 (a,b), 82 (a,b), 87.

Extra Problems:

1. Convert the following numbers to scientific notation:

a. 54,000 L	b. 8,090,100 km
c. 0.0245 g	d. 0.000 000 049 s

2. Convert the following numbers to ordinary notation:

a. 2.8×10^3 kg	b. 6.45×10^7 ns
c. 1.04×10^{-3} L	d. 9.405×10^{-6} m

3. How many stone (a British unit of weight) does a 175-lb person weigh? There are 14 lbs in one stone. Show all work (dimensional analysis), use correct sig figs and units.

4. A driver is tearing along at a speed of 2.0 km/min. How fast is this in miles/hour? There are 1.609 km in one mile and 60 min in one hr. Show all work (dimensional analysis), use correct sig figs and units.

Answers to calculations: Extra Problems: 3. 12.5 stone; 4. 75 mi/hr; Mastering Problems: 72. 1 g/mL; 73. 1.5 g/mL; 74. 3.0 g/mL; 80. a. 5.70×10^3 mg; b. 0.0437 m; c. 783,000 g; d. 0.0453 m; e. 1000 cm; f. 37.5 kg/L; 81. a. 5.5%; b. 0%; 82. a. 1.1%; b. 0.4%; 87. Slope = 2.7 g/mL;