Honors Chemistry Hour\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Dr. Wexler  
Unit Conversions Practice 2  
Date:

Most commonly used unit prefixes:  
milli- means 1/1000 centi- means 1/100 kilo- means 1000

**Show all work using the grid method for dimensional analysis!**

**Part I. Converting between metric units of length**

1. 1 meter = \_\_\_\_\_\_\_\_\_\_\_\_\_ millimeters

2. 1 millimeter = \_\_\_\_\_\_\_\_\_\_\_\_\_ meters

3. 1 kilometer = \_\_\_\_\_\_\_\_\_\_\_\_\_ meters

4. 1 kilometer = \_\_\_\_\_\_\_\_\_\_\_\_\_ centimeters

5. 1 kilometer = \_\_\_\_\_\_\_\_\_\_\_\_\_ millimeters

6. 1 meter = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ kilometers

7. 1 centimeter = \_\_\_\_\_\_\_\_\_\_\_\_\_ meters

8. 1 millimeter = \_\_\_\_\_\_\_\_\_\_\_\_\_ kilometers

9. 32 kilometers = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meters

**Part II. Converting between metric and English units of length**

Given that 1 inch = 2.54 centimeters:

11. 10 inches = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ centimeters

12. 10 inches = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meters (Given: 1 m = 100 cm)

13. 1 centimeter = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inches

14. 10 centimeters = \_\_\_\_\_\_\_\_\_\_\_\_\_ inches

15. 6 feet = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ centimeters (Given: 1 ft = 12 in)

**Part III. (Challenging)**   
Given the speed of light in space = 299,792, 458 m/s, what is the speed of light in miles/hour?