Unit 1 - Topic 1
Dimensional Analysis

Using the examples from your notes, solve the following problems using dimensional analysis (D.A.). Proportions or KH.... will NOT be accepted because later in the course, problems will become more complex and they simply will not work. Trust me ...

1. 2 L equals how many mL?

2. 12.9 kg equals how many g?

3. 14 mm equals how many m?

4. 57 mL equals how many L?

5. 34.6 kg equals how many mg?

6. How many miles are there in 14.6 km? (0.62 miles = 1.0 km)

7. 14.2 cm equals how many km?

8. 35 g equals how many kg?

9. The speed of light is 3.0×10^{10} cm/sec. Express this speed in mi/hr.

Complete the following using Dimensional Analysis:

10. If a car travels at an average of 46.8 miles per hour, how many miles can it go in 5.2 days?

11. A sample of seawater contains 0.000245 g of sodium chloride per mL of solution. How much sodium chloride is contained in 50.5 mL of this solution?

12. A particle moves through a gas at a speed of 15 km/s. How far will it move in 5.5 s?