

## **Dimensional Analysis Problems**

### PROBLEM SET # 1 – Conversions Using Dimensional Analysis

DO THESE CONVERSIONS IN THE DIMENSIONAL ANALYSIS STYLE. ANSWER IN SCIENTIFIC NOTATION IF THE ANSWER IS  $> 10^3$  or  $< 10^{-3}$ .

1. What is 1.50 mm in km?
2. How many nanoseconds are in 1.50 days?
3. How many fluid oz. of water do you have in exactly half of a ten gallon can?
4. A car is going 60.0 mph. How fast is that in ft/sec?
5. A car is going 62.0 MPH. How fast is that in kph?
6. How many  $\text{mm}^2$  are there in one square kilometer?
7. How many  $\text{in}^2$  are there in an acre?
8. How many  $\text{mm}^2$  are there in 0.550 acre?
9. A car goes 0 to 60.0 MPH in 5.00 sec. Write that acceleration in  $\text{m/sec}^2$ ?  
(Start with  $(60 \text{ mi})/(\text{hr.})(5 \text{ sec})$ )
10. Light travels at  $3.00 \times 10^8 \text{ m/sec}$ . How fast is that in MPH?