Quiz for Video 1 – Units and Conversions

1. Which of the following is not a complete measurement?
   a. 100 cm
   b. 35 g
   c. 61.4 PSI
   d. **41**

2. Which of the following conversion factors shows that 1 mile = 1.61 km?
   a. **$\dfrac{1\ mile}{1.61\ km}$**
   b. $\dfrac{1.61\ miles}{1\ km}$
   c. $\dfrac{1\ km}{1.61\ miles}$
   d. All of the above

3. If I want to find how the mass of 500 mL of a liquid with a density of 1.56 g/mL, what value should I begin my problem by writing down?
   a. **500 mL**
   b. 1.56 g
   c. 1 mL
   d. 1.56 g/mL

4. Which of the following is a commonly used unit for density?
   a. g
   b. mL
   c. lbs
   d. **g/mL**

5. When using the dimensional analysis approach to convert units, where should we place the unit that we are trying to "remove"?
   a. In the numerator of the conversion
   b. **In the denominator of the conversion**
   c. At the end of the problem
   d. We don't need the units

6. How many fluid ounces are in a 350 mL bottle? (1 fluid ounce = 29.57 mL)
   a. 1 fl oz
   b. 3.5 fl oz
   c. **11.84 fl oz**
   d. 29.57 fl oz

7. How many conversion factors can we use in a single dimensional analysis setup?
   a. 1
   b. 2
   c. 3
   d. **As many as we want**

8. I want to calculate the mass in grams of a 500 lb object, but I only know the following conversions: 1 kg = 2.2 lbs, 1000 g = 1 kg. What approach should my calculation use?
   a. **lb -> kg -> g**
   b. kg -> lb -> g
   c. lb -> g -> kg
   d. kg -> g -> lb

9. How do units behave differently mathematically from numerical values?
   a. We can only multiply units
   b. Units can be dropped while numerical values cannot
   c. Numerical values are quite similar
   d. **They are fundamentally quite similar**

10. Units will not matter much after this chapter.
    a. True
    b. **False**