Chemistry Homework  
Name: _____________________________

Due in lab Sept 19, 20, 22
Worth 5 points, no points for late homework
Show all your work: No credit will be given for problems that do show the calculations

1. Fill in the appropriate value below
   a) 15 kg = ____150_____ hg
       10 hg = 1 kg
       15 kg * 10 hg/1 kg = 150 hg
   b) 0.57 cm = __5.7_______ mm
       10 mm = 1 cm
       0.57 cm * 10 mm/1 cm = 5.7 mm
   c) 134 mm = __13.4_______ cm
       10 mm = 1 cm
       134 mm * 1 cm/10 mm = 13.4 cm
   d) 694 dag = ___69.4_______ hg
       10 dag = 1 hg
       694 dag * 1 hg/10 dag = 69.4 hg
   e) 85 l = ____8500____ cl
       100 cl = 1 l
       85 l * 100 cl/1 l = 8500 cl

2. How many centiseconds (cs) are in 10 milliseconds (ms)? __1 cs___________
   10 ms = 1 cs
   10 ms * 1 cs/10 ms = 1 cs

3. How many millimeters (mm) are equal to 0.54 centimeters (cm)? __5.4 mm_________
   10 mm = 1 cm
   0.54 cm * 10 mm/1 cm = 5.4 mm

4. How many kilograms does a 157 lb person weigh? 71.2 kg _____________
   1000 g = 1 kg
   1 lb = 453.59 g
   157 lb * 453.59 g/lb * 1 kg/1000 g = 71.2 kg
5. How many deciliters (dl) are in 0.032 liters (l)?  \( 0.32 \text{ dl} \)

\[
10 \text{ dl} = 1 \text{ l} \\
0.032 \text{ l} \times 10 \text{ dl/l} = 0.32 \text{ dl}
\]

6. How many milligrams (mg) would you weigh out if you needed 32 oz.  \( 907,200 \text{ mg} \)

\[
1000 \text{ mg} = 1 \text{ g} \\
1 \text{ oz} = 28.35 \text{ g} \\
32 \text{ oz} \times 28.35 \text{ g/oz} \times 1000 \text{ mg/g} = 907,200 \text{ mg}
\]

7. How many liters would you have put in your gas tank if you filled your tank with 6 gallons of gas?  \( 22.71 \text{ liters} \)

\[
1 \text{ gal} = 3.7853 \text{ l} \\
6 \text{ gal} \times 3.7853 \text{ l/gal} = 22.71 \text{ liters}
\]

8. How many centiliters are in 6.7 gallons?  \( 2,536 \text{ cl} \)

\[
1 \text{ gal} = 3.7853 \text{ l} \\
100 \text{ cl} = 1 \text{ l} \\
6.7 \text{ gal} \times 3.7853 \text{ l/gal} \times 100 \text{ cl/l} = 2,536 \text{ cl}
\]

9. The temperature outside is 62°F, what would this be in Celsius?  \( 16.67 \text{ ºC} \)

\[
62\text{ ºF} = (\text{ ºC} \times 9\text{ ºF}/5\text{ ºC}) + 32 \\
\text{Subtract 32 from both sides} \\
30\text{ ºF} = (\text{ ºC} \times 9\text{ ºF}/5\text{ ºC}) \\
\text{Multiple both sides by the 5ºC/9ºF} \\
30\text{ ºF} \times 5\text{ ºC}/9\text{ ºF} = 16.67 \text{ ºC}
\]