**WS 4.0: Unit Conversions**     Name:_____p.___

| Prefix | Symbol | Meaning |
|--------|--------|---------|
| Mega- | M | _____ |
| kilo- | k | _____ |
| | | |
| deci- | d | _____ |
| centi- | c | _____ |
| milli- | m | _____ |
| micro- | µ | _____ |
| nano- | n | _____ |

**Other Conversions:**
1 inch = 2.54 cm *(exactly)*
1 mile = 5280. ft
1 mile = 1.61 kilometers
1 foot = 12 inches (exactly)
1 hour = 60 minutes(exactly)
$1 cm^3 = 1$ mL (exactly)

(Memorize all prefixes in the above table)

YOU MUST SHOW ALL WORK AND ALL UNIT FACTORS TO RECEIVE CREDIT!

1. Make the following conversions
a. 3.2 feet to centimeters


b. 0.0567 meters to inches


c. 27.2 inches to millimeters


d. 3.00 days to minutes


e. 0.11 kilometers to feet


2a. A spider is moving at a speed of 48 feet per hour. Convert this speed into centimeters per minute.


2b. A car is traveling at a speed of 1400 meters per minute. Convert this speed to miles per hour.


2c. A puppy is gaining weight at a rate of 4.2 pounds per week. Convert this rate into grams per day. (Note: 1 kilogram = 2.20 pounds)


3. a. How many square inches are in one square foot?_____
b. How many cubic inches are in one cubic foot?_____

4. Convert $1.0 ft^3$ to $cm^3$.

**5.** A piece of gold has a mass of 0.245 kg (kilograms).
a. Convert the mass of gold from kilograms into grams.


b. Gold has a density of 19.2 g/cm$^3$.  Determine the volume of the piece of gold.


**6.** Aluminum has a density of 2.70 g/cm$^3$.  A cubic piece of aluminum has sides with a length of 2.0 inches.
a. Calculate the volume of the aluminum cube, in cubic centimeters (cm$^3$).


b. Calculate the mass of the piece of alumimum.


**7.** Significant Figure Practice:  Do the following calculations, and report the answer to the correct number of significant figures.

| | **Calculator Answer** | **Correct Sig. Fig. Answer** |
|---|---|---|
| a. 1132.3 + 124.2 + 1.27 | | |
| b. 3.23 x 152.3 | | |
| c. 85.6 / 4.28 | | |
| d. 13.108 - 2.66 | | |
| e. 0.0050000 x 4.0 | | |
| f. 3080 + 256.27 | | |


**8.** A cat is moving at a speed of 14000 meters per hour.  Convert this speed to feet per minute.


**9.** Make the following conversions:
a. 1447 seconds into days


b. 899 millimeters (mm) into feet.


c. 0.25 kilometers (km) into meters


d. 0.0040 kilograms to milligrams


e. 55.5 inches into meters


f. 3.50 miles into meters