Name

Date

Period

Conversions/ Dimensional Analysis

|  |  |  |
| --- | --- | --- |
| Mass | Volume | Distance |
| 1 lb= 454 g | 1 gal= 3.78 L | 1ft= 0.305 m |
| 1 g= 0.0022 lb | 1 L= 0.27 gal | 1 m= 3.28 ft |

Convert SI and English units with the following factors:

**Example**- How many centimeters is 38 ft?

Step 1: Put the known quantity in the upper-left space as follows:

Step 2: Put the conversion factor (also called an equality) in the next set of boxes to the right. Make sure that the units match diagonally. We started with feet on top, so we’ll put feet on the bottom of this next conversion factor, as follows:

Step 3: Cross out, or cancel, the units that appear on both the top and the bottom, as follows:

Step 4: Now ask, “Is the unit that is NOT CROSSED OUT the one that I want?” If yes, then continue to Step 5. If no, return to Step 2.

Step 2 (repeated): Remember to match units diagonally.

Step 3 (repeated): Cross out the matching units.

Step 4 (repeated):

Step 5: To solve the problem, multiply the numbers on the top row:

Then multiply the all of the numbers on the bottom row:

Now, divide the top row’s product by the bottom row’s product.

Questions:

The following problems will help you practice your metric-to-metric, English to SI, and SI to English conversions. Be sure to SHOW YOUR WORK.

1 How many meters is 1,602 ft?

2 How many pounds is 12 g?

3 How many gallons is 0.2 L?

4 How many deciliters is 5 L? (Hint- How many deciliters are in 1 L?)

5 How many meters is 63.9 cm?