Notes on

Measurement Conversions

To convert from one unit to another, perform the following steps. (It does not matter whether you are converting from customary to customary, metric to metric, customary to metric, or metric to customary, the same process will work anytime.)

1. Write a ratio using the measurement information presented in the problem.

2. Find the conversion information that shows the relationship between the units represented. (This can be found on the FSA Reference Sheet for customary to customary and metric to metric. For customary to metric and metric to customary, it must be given inside of the problem itself. Sometimes you may need to use more than one of the relationships on the reference sheet to relate the given units.)

3. Write a ratio using this relationship, and set them up as equivalent ratios using a variable, like x, for the unknown number. (BE SURE to put them in the same order that you used to write your ratio in step 1.)

4. Figure out what you need to do to make the ratios equivalent.

5. Do the same thing to the other part of the ratio to find the correct measurement. (Be sure to include the correct units in your answer.)

For example, let's figure out how many gallons are in 48 pints.

1. Ratio from problem: $\dfrac{48\ pints}{x\ gallons}$

2. Using reference sheet, I see that 1 gallon = 4 quarts, and 1 quart = 2 pints, so 1 gallon = 8 pints.

3. So my equivalent ratios are $\dfrac{48\ pints}{x\ gallons} = \dfrac{8\ pints}{1\ gallon}$

4. By looking at the numerators of our ratios (that is where 2 numbers are at), I can simply multiply 8 pints by 6 to get to 48 pints.

5. So now I can do the same thing to the denominator. So,

$$\frac{48\ pints}{x\ gallons} = \frac{6 \cdot 8\ pints}{6 \cdot 1\ gallons}$$

So, since 6 • 1 = 6, x = 6 gallons, so 48 pints = 6 gallons.