Volume, Capacity, and Mass (Section 11.5 Continued)

Units of Volume

If $1 \text{dm} = 10 \text{cm}$ then $1 \text{dm}^3 = \text{__________} \text{cm}^3$. Why?

Dimensional Analysis:

Examples: Convert each of the following.

a. $4 \text{dm}^3 = \text{__________} \text{mm}^3$

b. $14000 \text{cm}^3 = \text{__________} \text{m}^3$

The English System

If $1 \text{ft} = 12 \text{in}$ then $1 \text{ft}^3 = \text{__________} \text{in}^3$. Why?

Dimensional Analysis:

Examples: Convert the following.

a. $45 \text{yd}^3 = \text{__________} \text{ft}^3$
Units of Capacity

Liters:

Common Units:

1 Milliliter = $\underline{\quad} cm^3$

1 Liter = $\underline{\quad} dm^3$

Relationship to English System:

1 Liter = $\underline{\quad}$ Gallons

Examples: Convert each of the following.

a. $50mL = \underline{\quad} L$

b. $12mL = \underline{\quad} m^3$

c. $4m^3 = \underline{\quad} L$
The English System

Common Units:

1 Gallon = ________ Quarts = ________ Pints = ________ Cups

1 Quart = ________ Pints

1 Pint = ________ Cups

Relationship to cubic units:

1 Gallon = ________ $in^3$

Examples: Convert each of the following.

a. 50 cups = ________ quarts

b. 10 quarts = ________ pints

c. 24 gal = ________ $ft^3$
Units of Mass

Grams:

Common Units:

1 gram = ___________mL of water = ___________cm³ of water

Approximation:

1 kilogram= ___________L of water= ___________dm³ of water

Approximation:

1 metric ton= ___________kg

Approximation:

Relationship to English System:

The English System:

Examples: Convert each of the following.

a. 200mg = ___________g

b. 20oz = ___________lbs
Examples: Fill in the appropriate unit of measure.

a. Jessica filled her gas tank with 80 _____.

b. Bob has a mass of 82 _____.

c. One nickel has a mass of 5 _____.

d. A car has a mass of 1.5 _____.

e. The amount of coffee in a cup is 200 _____.

Homework: