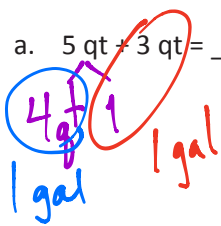Name _____ Date _____

1. Determine the following sums and differences. Show your work.
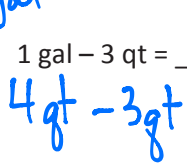
   a. 5 qt + 3 qt = __2__ gal

   $4qt + 1$
   $1 gal$
   $1 gal$

   b. 1 gal 2 qt + 2 qt = __2__ gal

   $1 gal \quad 2qt$
   $1 gal$

   c. 1 gal − 3 qt = __1__ qt

   $4qt - 3qt$

   d. 3 gal − 2 qt = __2__ gal __2__ qt

   $2 gal \quad 4qt$
   $2qt$

   e. 1 c + 3 c = __1__ qt

   $4 cups = 1qt$

   f. 2 qt 3 c + 5 c = __4__ qt

   $2qt \quad 3c \quad 1c \quad 4c$
   $1qt \quad 1qt$
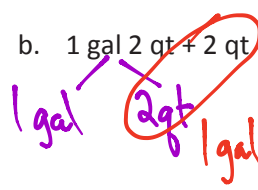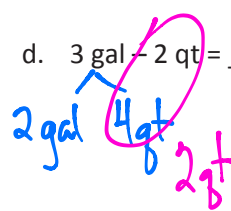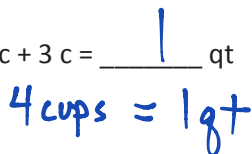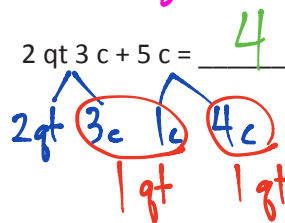
   g. 1 qt − 1 pt = __1__ pt

   $2pt - 1pt = 1pt$
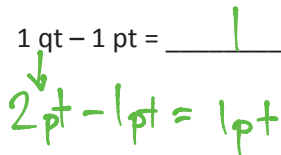
   h. 6 qt − 5 pt = __3__ qt __1__ pt

   $3qt \quad 6pt$
   $1pt$
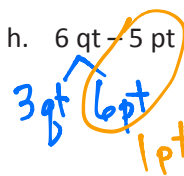
2. Find the following sums and differences. Show your work.

   a. 4 gal 2 qt + 3 qt = __5__ gal __1__ qt

   $4 gal \quad 5qt$
   $1 gal \quad 1qt$
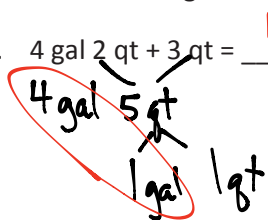
   b. 12 gal 2 qt + 5 gal 3 qt = __18__ gal __1__ qt

   $17 gal \quad 5qt$
   $1 gal \quad 1qt$
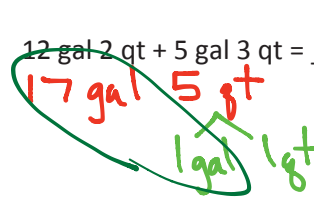
   c. 7 gal 2 pt − 3 pt = __6__ gal __7__ pt

   $6 gal \quad 10pt$
   $7pt$
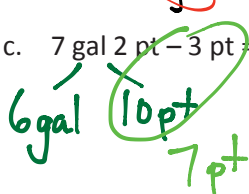
   d. 11 gal 3 pt − 4 gal 6 pt = __6__ gal __5__ pt

   $4 gal \ 6pt \xrightarrow{+2pt} 5 gal \xrightarrow{+6gal} 11 gal \xrightarrow{+3pt} 11 gal \ 3pt$

   e. 12 qt 5 c + 6 c = __14__ qt __3__ c

   $12qt \quad 11 cups$
   $4c \quad 4c \quad 3c$
   $2qt$
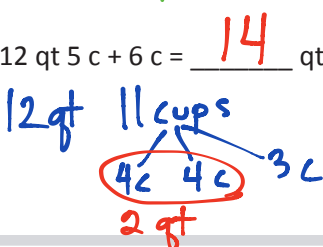
   f. 8 gal 6 pt + 5 gal 4 pt = __14__ gal __2__ pt

   $13 gal \quad 10pt$
   $8pt \quad 2pt$
   $1 gal$

Lesson 6: Solve problems involving mixed units of capacity.
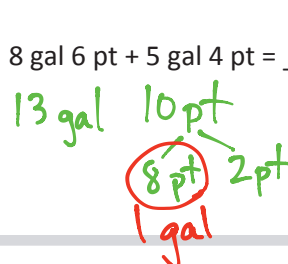
3. The capacity of a bucket is 5 gallons. Right now, it contains 3 gallons 2 quarts of liquid. How much more liquid can the bucket hold?

$$3 \text{ gal } 2 \text{ qt } \xrightarrow{+2\text{qt}} 4 \text{ gal} \xrightarrow{+1\text{gal}} 5 \text{ gal}$$

The bucket can hold 1 gal 2 qt more liquid.

4. Grace and Joyce follow the recipe in the table to make a homemade bubble solution.

    a. How much solution does the recipe make?

gal	qt	pt	cups
2		3	
	2		1
			2

$$\begin{array}{cccc} 2 & 2 & 3 & 3 \\ +1 & +2 & +1 & \\ \hline 3 & 4 & 4 & 2 \end{array}$$

$\boxed{3 \text{ gal } 1 \text{ cup}}$

Homemade Bubble Solution	
Ingredient	Amount
Water	2 gallons 3 pints
Dish Soap	2 quarts 1 cup
Corn Syrup	2 cups

    b. How many more cups of solution would they need to fill a 4-gallon container?

$$1 \text{ gal} = 4 \text{ qt} = 8 \text{ pt} = 16 \text{ cups}$$
$$1 \text{ qt} = 2 \text{ pt}$$
$$1 \text{ pt} = 2 \text{ cups}$$

$$3 \text{ gal } 1 \text{ cup} \xrightarrow{+15 \text{ cups}} 4 \text{ gal}$$

They need 15 cups more to make 4 gallons.