

Culinary Math

Name: Answer Sheet Date: _____

Quiz 1 - Chapter 1 and 2

1. There are 11 sheet cakes that measure 30 inches long by 20 inches wide and are 2 inches tall on the edges. Chef needs 1/8 inch thick green icing on the sides and top. A cup of icing applied 1/8 thick spreads over 115.5 square inches of cake. How many gallons of icing do you need? 4.76 gal.
2. How much does 3 3/4 gallons of corn weigh? (Refer to the density chart on page 64 of the textbook) 480 oz.
3. Chef is making 2 inch wide lasagna noodles for dinner. Chef places all of rows long ways in the 14 inch by 10 inch pan. There are five layers of noodles. How many feet of noodles are required for 8 trays of lasagna? 233.33 ft or 233ft 4in.
4. The trimmed dark bread is 13 inch x 5.0 inch x 6.0 inches. How many 1 x 1 x 1 inch hors d'oeuvres bread cubes can we cut from the bread?
5. Chef asks you to spread finely shredded cheese on each of 240 hors d'oeuvres. Each hors d'oeuvre has a 1 1/3 tsp of finely shredded cheese. How many cups of finely shredded cheese are required?
6. Chef finds that the children at Washington Elementary school drink 12 fl. oz. of milk with breakfast and 16 fl. oz. of milk for lunch. The kindergarten class has 8 fl. oz. of milk for snack time. There are 235 students in grades 1 through 3 that eat the school lunch daily. There are 38 kindergarten students. How many gallons of milk does Chef need daily?
7. Chef added 15 3/4 cups of water, 14 1/4 cups of broth and 4 tbsp of cream to the soup. How many ounces of soup does chef have? How many gallons?
8. How many pounds and ounces does 16.75 pounds of steak weigh?
9. Chef needs 87.5% of gallon. How many cups, pints or quarts are needed?
10. What are the abbreviations for the following:

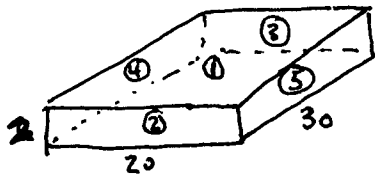
Tablespoon	Tbsp or T	Teaspoon	tsp or t
Cup	c	Inch	in
Gallon	g or gal	Quart	qt
Pint	pt	Ounce	oz.
Fluid Ounce	fl. oz.	Pound	lb
Each	ea	Bunch	bu

11. Convert the following kitchen measurements:

<u>64</u> cups in 4 gallons 16×4	<u>6</u> quarts in 1.5 gallons
<u>4</u> pints in a half gallon	<u>16</u> ounces in a pound
<u>6</u> Tbsp in 3 fl. oz. 2×3	<u>4</u> gallons in a 2 pecks
<u>4</u> pecks in a bushel	<u>8</u> fl. oz. in a cup
<u>128</u> fl. oz. in a gallon	<u>12</u> 1/2 tsp in 2 Tbsp

n 1 & 2 Exercise Solution Sheet

1.



$\frac{1}{8}$ thick icing spreads over the cake at 115.5 sq. in.

Step 1: Find the area of the five sides of the cake.

Side 1: $1 \times 20 \text{ in} \times 30 \text{ in} = 600 \text{ in}^2$

Side 2 & 3: $2 \times 20 \text{ in} \times 2 \text{ in} = 80 \text{ in}^2$

Side 4 & 5: $2 \times 30 \text{ in} \times 2 \text{ in} = 120 \text{ in}^2$
 $\underline{\hspace{1.5cm}}$
 800 in^2

Step 2: Find the total surface area.

$800 \text{ in}^2 \times 11 = 8800 \text{ in}^2$

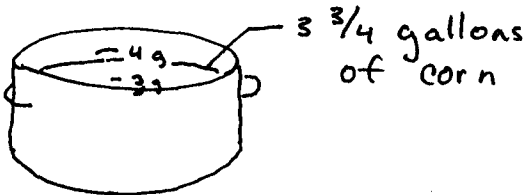
Step 3: Compute the amount of icing

$8800 \text{ in}^2 \div 115.5 \frac{\text{in}^2}{\text{c}} = 76.2 \text{ cups}$

Step 4: Find the number of gallons (1 gal = 16 cups)

$\frac{76.2 \text{ cups}}{16 \text{ cups}} = 4.76 \text{ gallons of icing}$

2.



On page 64. of Culinary Math 2nd Ed.
 Corn is 8 oz/cup

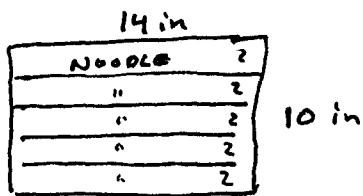
Step 1: Find the cups in a gallon

$3 \text{ gal} \times 16 \text{ cups} = 48 \text{ cups}$

$\frac{3}{4} \text{ gal} \times 16 \text{ cups} = 12 \text{ cups}$
 $\underline{\hspace{1.5cm}}$
 60 cups

Step 2: Find the weight of the corn

$\frac{60 \text{ cups}}{1 \text{ cup}} \times 8 \text{ oz.} = 480 \text{ oz. of corn}$



Step 1: Find out how many inches of 2" wide noodles are on the first layer.

$$\text{Layer: } 5 \times 14 \text{ in} = 70 \text{ in.}$$

Step 2: Determine the total length of noodles for the entire lasagna

$$5 \text{ layers} \times 70 \text{ in} = 350 \text{ inches.}$$

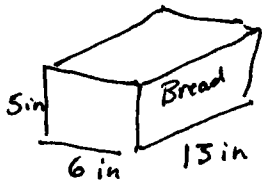
Step 3: Find the total quantity of noodles for 8 trays

$$8 \times 350 \text{ in} = 2800 \text{ in}$$

Step 4: Convert inches to feet.

$$\frac{2800 \text{ in}}{12 \text{ in/ft}} = 233 \text{ Ft. } 4 \text{ in. of noodles}$$

4.



Step 1: Find the Volume of the Bread

$$L \times W \times H$$

$$5 \text{ in} \times 6 \text{ in} \times 13 \text{ in} = 390 \text{ in}^3$$

Step 2: Find the Volume of the hors d'oeuvre

$$L \times W \times H$$

$$1 \text{ in} \times 1 \text{ in} \times 1 \text{ in} = 1 \text{ in}^3$$

Step 3: Find the total pieces

$$\frac{\text{Big Volume}}{\text{Little Volume}} = \frac{390 \text{ in}^3}{1 \text{ in}^3} = 390 \text{ pc of bread}$$

$$240 \text{ hors d'oeuvres} \times \frac{1}{3} \text{ tsp}$$

$$240 \times \frac{4}{3} \text{ tsp} = \frac{960}{3} = 320 \text{ tsp}$$

Step 1: Find the total amount of teaspoons



Step 2: Convert tsp to cups

$$\frac{320 \text{ tsp}}{48 \text{ tsp}} = 6.67 \text{ cups}$$

There are 48 tsp in a cup

$6 \frac{2}{3}$ cups of shredded cheese

6. Children at Washington Elementary

Grades 1-3 : 235  12 fl. oz Milk Breakfast 16 fl. oz. lunch
K : 38  8 fl. oz Milk Snack

Step 1

Find total Milk for each student.

$$\begin{array}{l} \text{Stick figure}_{1-3} \quad 12.0 \text{ fl. oz.} + 16 \text{ fl. oz.} = 28 \text{ fl. oz.} \\ \text{Stick figure}_K \quad 8 \text{ fl. oz.} \end{array}$$

Step 2: Find Total Milk Consumption

$$(235 \times 28) + (8 \times 38) = 6580 + 304 = 6884 \text{ fl. oz.}$$

Step 3: Convert to gallons

$$\frac{6884 \text{ fl. oz.}}{128 \text{ fl. oz.}} = 53.8 \text{ gallons}$$

There are 128 fl. oz. in a gallon

Ans. $53 \text{ gal.} - 3 \text{ qts.} - \frac{1}{2} \text{ cup.}$

7.

$$\begin{array}{l} 15 \frac{3}{4} \text{ cups of water} = 126 \text{ fl. oz.} \\ 14 \frac{1}{4} \text{ cups of broth} = 114 \text{ fl. oz.} \\ 4 \text{ Tbsp of cream} = 2 \text{ fl. oz.} \\ \hline 242 \text{ fl. oz.} \end{array}$$

Step 1: Convert to ounces

Step 2: Convert to cups

$$\frac{242 \text{ fl. oz.}}{8 \text{ fl. oz.}} = 30 \frac{1}{4} \text{ cups}$$

Step 3: Convert to gallons

1 gal + 3 qts + 1 pt + $\frac{1}{4}$ cup

16.75 pounds of steak

16 ounces in a pound

$$16.75 \text{ lbs} \rightarrow = 16 \text{ Lbs.}$$

$$\hookrightarrow 0.75 \times 16 = 12 \text{ oz.}$$

Step 1: Write the pounds down

Step 2: Multiply the decimal times 16 ounces

8. 87.5% of a gallon

Step 1: Convert the percentage to a fraction

$$\frac{87.5}{100}$$

Step 2: Convert a fraction to a decimal

$$87.5 \div 100 = 0.875$$

The decimal point moves
2 positions to the left
to convert from % to decimal

Step 3: Multiply the decimal times the volume in fluid ounces

$$0.875 \times 128 = 112 \text{ fl oz.} = 7 \text{ pints}$$