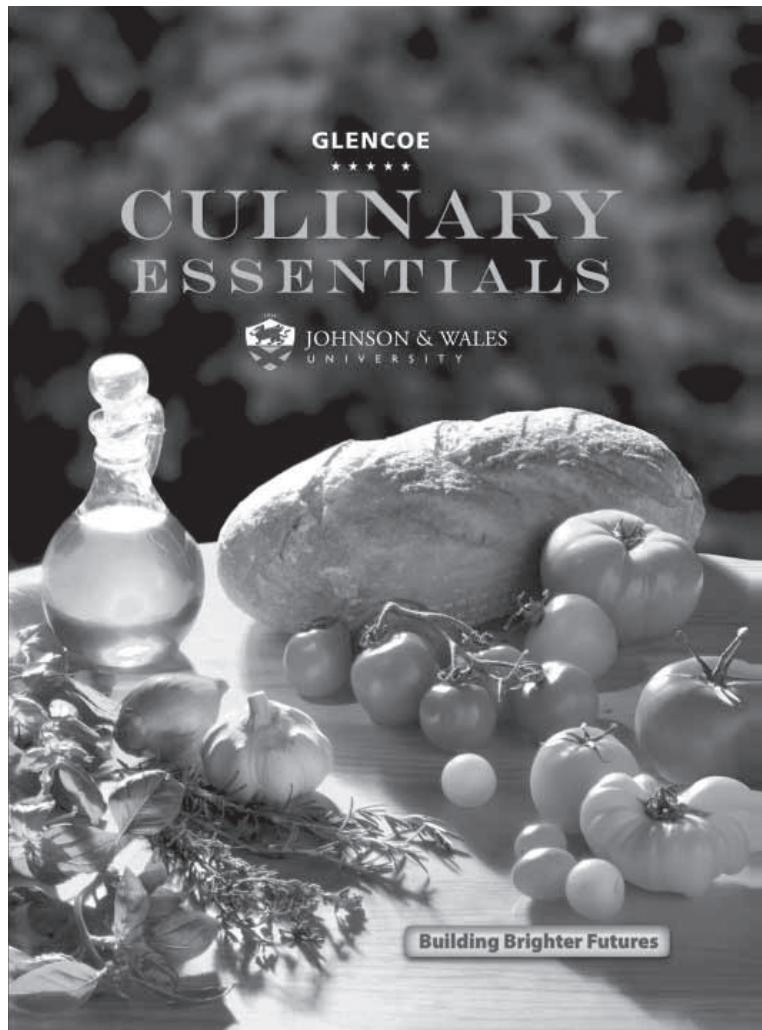


CULINARY ESSENTIALS

Culinary Math Skills



Glencoe



JOHNSON & WALES
UNIVERSITY

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Making Change

Directions: For each problem below, list the coins and bills in the order in which they should be returned to the customer as change. Write your answers on the blanks provided.

1. The customer's check totaled \$4.72 and she gives you a \$10 bill.

2. The customer's check totaled \$7.79 and he gives you two \$5 bills.

3. The customer's check totaled \$5.38 and she gives you \$10.03.

4. The customer's check totaled \$16.28 and he gives you \$20.00.

5. The customer's check totaled \$9.82 and she gives you \$10.00.

6. The customer's check totaled \$5.16 and he gives you \$6.01.

7. The customer's check totaled \$13.29 and she gives you \$15.04.

8. The customer's check totaled \$7.55 and he gives you \$10.05.

9. The customer's check totaled \$3.45 and she gives you \$5.00.

10. The customer's check totaled \$4.10 and he gives you \$20.00.

Reading Labels

Directions: For each label provided by your instructor, answer the following questions on the blanks provided. If necessary, reproduce a copy of this activity sheet for each label.

LABEL NAME: _____

1. What is the serving size? _____

2. How many servings are there in the container? _____

3. What is the weight of the can/box/container? _____

If a can, what number can size is it? _____

4. What is the volume measure? _____

5. How many calories are in one serving? _____

6. How many total fat grams are in one serving? _____

7. How many total grams of carbohydrate are in one serving? _____

8. How many grams of protein are in one serving? _____

9. List the first six ingredients, in order:

a) _____

d) _____

b) _____

e) _____

c) _____

f) _____

10. List the manufacturer: _____

11. List the brand name: _____

12. List other information items found on the label but not covered in the questions above.

Pounds and Ounces

Directions: Change each of the following measures into ounces, pounds, or pounds and ounces. Write your answers on the blanks provided.

1. 6 lbs. = _____ oz.

16. 15 lbs. 2 oz. = ____ oz.

2. 13 lbs. = _____ oz.

17. 19 lbs. 11 oz. = _____ oz.

3. 5 lbs. 8 oz. = _____ oz.

18. 32 lbs. 6 oz. = _____ oz.

4. 8 lbs. 4 oz. = _____ oz.

19. 45 lbs. 10 oz. = _____ oz.

5. 12 lbs. 12 oz. = _____ oz.

20. 53 lbs. 15 oz. = _____ oz.

6. 19 oz. = _____ lbs., _____ oz.

21. 87 oz. = _____ lbs., _____ oz.

7. 32 oz. = _____ lbs. _____

22. 112 oz. = _____ lbs.

8. 43 oz. = _____ lbs., _____ oz.

23. 158 oz. = _____ lbs., _____ oz.

9. 65 oz. = _____ lbs., _____ oz.

24. 243 oz. = _____ lbs., _____ oz.

10. 75 oz. = _____ lbs., _____ oz.

25. 347 oz. = _____ lbs., _____ oz.

11. $\frac{1}{2}$ lb. = _____ oz.

26. $\frac{5}{8}$ lb. = _____ oz.

12. $\frac{1}{4}$ lb. = _____ oz.

27. $\frac{7}{8}$ lb. = _____ oz.

13. $\frac{3}{4}$ lb. = _____ oz.

28. $3\frac{1}{4}$ lbs. = _____ lbs., _____ oz.

14. $\frac{1}{8}$ lb. = _____ oz.

29. $8\frac{3}{4}$ lbs. = _____ lbs., _____ oz.

15. $\frac{3}{8}$ lb. = _____ oz.

30. $5\frac{5}{8}$ lbs. = _____ lbs., _____ oz.

Recipe Conversion

Directions: Determine the conversion factor for each new recipe. Use the recipe conversion factor to increase or decrease each ingredient amount for *New Recipe #1* and *New Recipe #2*. Write your answers on the blanks provided in the easiest measurable form.

	Original Recipe	New Recipe #1	New Recipe #2
		_____ Conversion Factor	_____ Conversion Factor
	8 Servings	4 Servings	16 Servings
<u>Ingredients:</u>			
Shortening	2½ cups	_____	_____
Sugar	1⅓ cup	_____	_____
Vanilla	1 Tbsp.	_____	_____
Eggs	2	_____	_____
Sifted cake flour	2⅓ cups	_____	_____
Baking powder	3 Tbsp.	_____	_____
Salt	1 tsp.	_____	_____
Milk	8 oz.	_____	_____
Syrup	6 Tbsp.	_____	_____
Pecans	¾ cup	_____	_____

Weight and Volume Charts

Directions: Convert the following ingredients from weight measures to equivalent volume measures. Write your answers on the blanks provided in the easiest measurable form.

Ingredients	Weight/Volume Information	Weight	Volume
Bread flour	1 lb. = 4 cups	4 lbs.	
Dark rye flour	1 lb. = $3\frac{3}{4}$ cups	2 lbs.	
Yeast	1 oz. = 3 Tbsp.	4 oz.	
Salt	1 oz. = 2 Tbsp.	$1\frac{1}{2}$ oz.	
Dry milk	1 oz. = $\frac{1}{3}$ cup	4 oz.	
Shortening	1 lb. = 2 cups	3 lbs.	
Granulated sugar	1 lb. = 2 cups	2 lbs.	
Malt	1 oz. = $\frac{1}{3}$ cup	2 oz.	
Water	1 lb. = 2 cups	4 lbs.	

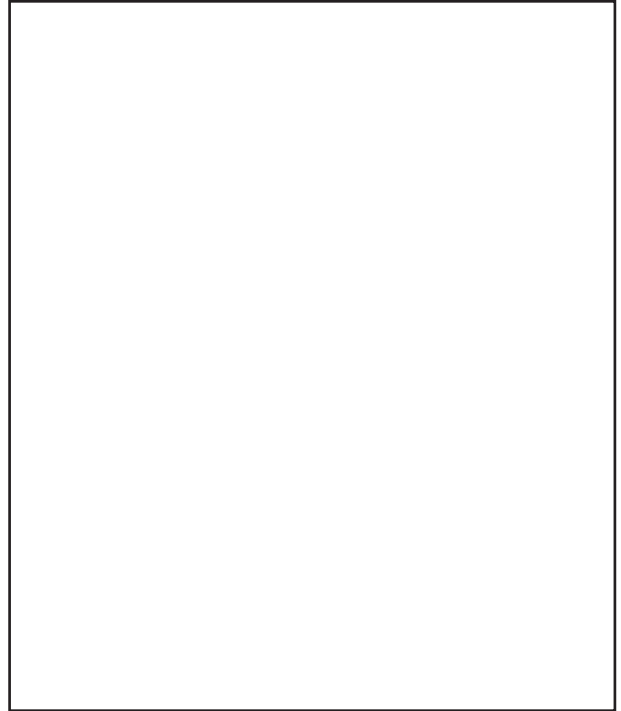
Directions: Convert the following ingredients from the green volume measures to equivalent weight measures.

Ingredients	Weight/Volume Information	Volume	Weight
Brown sugar, packed	1 lb. = 2 cups	1 pt.	
Shortening	1 lb. = 2 cups	$\frac{1}{2}$ cup	
Salt	1 oz. = 2 Tbsp.	3 Tbsp.	
Baking soda	1 oz. = 2 Tbsp.	3 Tbsp.	
Pastry flour	1 lb. = 4 cups	2 qts.	
Whole eggs	1 lb. = 8 eggs	6 eggs	
Vanilla	1 oz. = 2 Tbsp.	$1\frac{1}{2}$ tsp.	

Weight and Volume Conversion

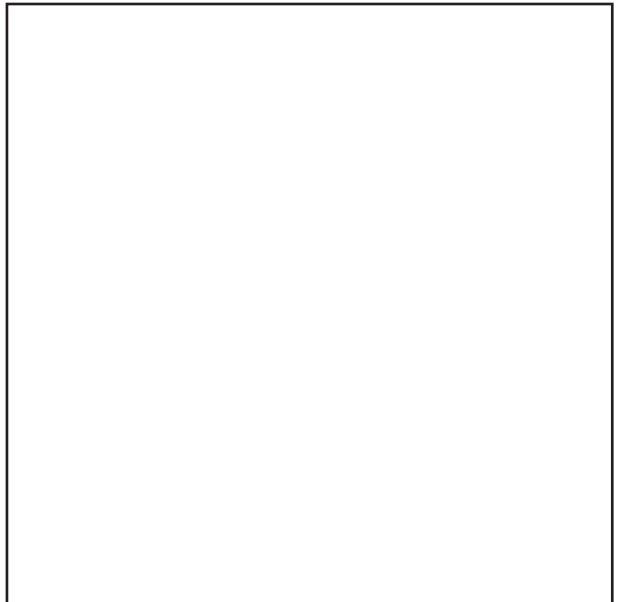
Directions: Use the following information to convert the volume measures to weight measures. Use the space provided to do your calculations. Write your answers on the blanks provided.

1. If 1 lb. = 2 cups, then $1\frac{1}{2}$ cup = _____
2. If 1 lb. = 6 cups, then 3 cups = _____
3. If 1 lb. = 1 qt., then 2 cups = _____
4. If 1 lb. = 4 cups, then 2 cups = _____
5. If 1 lb. = 2 qts., then 1 cup = _____
6. If 1 oz. = $1\frac{1}{2}$ Tbsp., then 6 Tbsp. = _____
7. If 1 oz. = 2 Tbsp., then 3 Tbsp. = _____
8. If 1 lb. = 3 qts., then 3 cups = _____
9. If 8 oz. = 1 cup, then $4\frac{1}{2}$ cups = _____
10. If 128 oz. = 1 gal., then 64 oz. = _____



Directions: Use the following information to convert the weight measures to volume measures. Use the space provided to do your calculations. Write your answers on the blanks provided.

11. If 1 lb. = 2 cups, then 4 oz. = _____
12. If 1 lb. = 2 qts., then 16 oz. = _____
13. If 8 oz. = 1 cup, then 3 lbs. 4 oz. = _____
14. If 1 lb. = 3 cups, then 2 lbs. = _____
15. If 1 lb. = 6 cups, then $1\frac{1}{2}$ lbs. = _____



Weight Versus Volume

Directions: Using the tools and ingredients provided by your instructor, weigh or measure as directed below. Then write your answers to the questions on the blanks provided.

1. Weigh 1 lb. of chocolate chips. How many cups are in one pound? _____
2. Measure 1 Tbsp. of salt. How much does it weigh? _____
3. Measure 1 Tbsp. of dried parsley. How much does it weigh? _____
4. Measure 1 Tbsp. of dry mustard. How much does it weigh? _____
5. Weigh 1 lb. of carrots. How many carrots do you have? _____
6. Peel and cut a pound of carrots into coins. How many cups does that make? _____
7. Weigh one bunch of celery. How many stalks are there? _____
8. Peel and dice a bunch of celery for soup. How many cups does that make? _____
9. Weigh one bag of peas. How many pounds/ounces are there? _____
10. Measure 1 cup of brown sugar. Weigh and record. _____
11. Measure 1 cup of granulated sugar. Weigh and record. _____
12. Measure 1 cup of flour. Weigh and record. _____

PERFORMANCE ✓ CHECKLIST

PERFORMANCE STANDARDS:
Level 4 —Performs skill without supervision and adapts to problem situations.
Level 3 —Performs skill satisfactorily without assistance or supervision.
Level 2 —Performs skill satisfactorily, but requires assistance/supervision.
Level 1 —Performs parts of skill satisfactorily, but requires considerable assistance/supervision.
Level 0 —Cannot perform this skill.

Attempt (circle one): **1 2 3 4**

Comments:

PERFORMANCE LEVEL ACHIEVED:

- _____ 1. Accurately sets up balance scale, digital scale, and portion scale for measurement.
- _____ 2. Accurately weighs ingredients as indicated.
- _____ 3. Accurately measures ingredients as indicated.
- _____ 4. Demonstrates correct measuring procedure for volume amounts.
- _____ 5. Records results in measurable terms.

Instructor's Signature _____ **Date** _____

Volume Measures

Directions: Use the weight/volume information given for each item below to find the volume equivalent of the desired weight measure. Write your answers on the blanks provided.

Item	Weight/Volume Information	Volume Equivalent
Cooked rice	1 lb. = 2½ cups	8 oz. = _____
Apples, peeled and sliced	1 lb. = 1 qt.	2 oz. = _____
Diced bananas	1 lb. = 3 cups	6 oz. = _____
Coconut, shredded	1 lb. = 6 cups	12 oz. = _____
Evaporated milk	1 lb. = 2 cups	8 oz. = _____

Directions: If 1 lb. of cocoa measures 4 cups, find the volume measures for each of the following weights. Write your answers on the blanks provided.

1. 16 oz. = _____ cups

4. 4 oz. = _____ cups

2. 24 oz. = _____ cups

5. 12 oz. = _____ cups

3. 32 oz. = _____ cups

6. 20 oz. = _____ cups

7. What is the volume measure for 5 oz. of cocoa? _____

8. What is the volume measure for 6 oz. of cocoa? _____

9. What is the volume measure for 10 oz. of cocoa? _____

10. What is the volume measure for 11 oz. of cocoa? _____

Scale Operation

Directions: Using a *portion scale*, demonstrate the following procedures to your instructor.

1. Adjust scale after placing a quart measuring cup on it.
2. Weigh 4 oz. of granulated sugar.
3. Weigh 1½ oz. of salt.
4. Weigh 1 lb. 2 oz. of water.
5. Weigh 12¾ oz. of flour.

Directions: Using a *baker’s scale*, demonstrate the following procedures to your instructor.

1. Weigh 2 lbs. 6 oz. of granulated sugar.
2. Weigh 4½ lbs. of flour.
3. Weigh 6 lbs. 12 oz. of water.
4. Weigh 1 lb. of salt.
5. Weigh 3¾ lbs. of brown sugar.

Directions: Using a *digital scale*, demonstrate the following procedures to your instructor.

1. Weigh 6½ oz. of granulated sugar.
2. Weigh 1 lb. of brown sugar.
3. Weigh 1½ lbs. of salt.
4. Weigh 12 oz. of flour.
5. Weigh 1 lb. 14 oz. of water.

PERFORMANCE ✓ CHECKLIST

PERFORMANCE STANDARDS:
Level 4 —Performs skill without supervision and adapts to problem situations.
Level 3 —Performs skill satisfactorily without assistance or supervision.
Level 2 —Performs skill satisfactorily, but requires assistance/supervision.
Level 1 —Performs parts of skill satisfactorily, but requires considerable assistance/supervision.
Level 0 —Cannot perform this skill.

Attempt (circle one): 1 2 3 4

Comments:

PERFORMANCE LEVEL ACHIEVED:

- _____ 1. Demonstrates proper use of a portion scale, a baker’s scale, and a digital scale.
- _____ 2. Adjusts scales as needed for accurate measurements.
- _____ 3. Measures container weight before measuring ingredients if needed.
- _____ 4. Accurately weighs ingredients on a portion scale, baker’s scale, and a digital scale.

Instructor’s Signature _____ Date _____

Cooking with Fractions

Directions: Read the questions carefully. Write your answers on the blanks provided.

1. In addition to 1 cup, what are the measures in a set of standard measuring cups?

a.) _____ c.) _____

b.) _____

2. What are the units of measure in a set of standard measuring spoons?

a.) _____ c.) _____

b.) _____ d.) _____

3. Put the following fractions in the correct order of size beginning with the smallest: $\frac{3}{8}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{7}{8}$, $\frac{1}{4}$, $\frac{5}{8}$, $\frac{1}{8}$. _____

4. How many $\frac{1}{2}$ cups are there in 1 cup? _____

5. How many $\frac{1}{8}$ cups are there in $\frac{1}{2}$ cup? _____

6. How many $\frac{1}{4}$ cups are there in $\frac{3}{4}$ cup? _____

7. How many $\frac{1}{8}$ cups are there in $\frac{1}{4}$ cup? _____

8. Circle the largest number of each pair.

a.) $\frac{3}{8}$ or $\frac{1}{4}$ c.) $\frac{1}{2}$ or $\frac{1}{4}$

b.) $\frac{7}{8}$ or $\frac{3}{4}$ d.) $\frac{3}{8}$ or $\frac{1}{2}$

9. List the specific measuring equipment you need to accurately and efficiently measure the following amounts.

a.) $\frac{1}{4}$ cup _____ e.) $\frac{5}{8}$ cup _____

b.) $\frac{1}{8}$ cup _____ f.) $\frac{2}{3}$ cup _____

c.) $\frac{3}{4}$ cup _____ g.) $\frac{3}{8}$ cup _____

d.) $\frac{1}{2}$ cup _____ h.) $\frac{7}{8}$ cup _____

10. What is the most efficient way to measure each of the following amounts?

a.) 8 cups _____ c.) 2 cups _____

b.) 6 pts. _____ d.) $\frac{1}{4}$ gal. _____

Calculating Convection Temperature

Directions: Figure the convection oven temperatures for each of the following stated baking temperatures. Write your answers on the blanks provided. **To do this, reduce the baking temperature by 50°F.** For Example: Recipe states = 250°F. Therefore, $250^{\circ}\text{F} - 50^{\circ}\text{F} = 200^{\circ}\text{F}$ for a convection oven.

1. $300^{\circ}\text{F} =$ _____ $^{\circ}\text{F}$
2. $450^{\circ}\text{F} =$ _____ $^{\circ}\text{F}$
3. $350^{\circ}\text{F} =$ _____ $^{\circ}\text{F}$
4. $400^{\circ}\text{F} =$ _____ $^{\circ}\text{F}$
5. $425^{\circ}\text{F} =$ _____ $^{\circ}\text{F}$

Directions: For each item below, find the temperature required for convection ovens.

6. A recipe for baked egg casserole directs you to bake at 350°F .
Convection Oven Temperature: _____
7. A spinach omelet recipe directs you to bake at 325°F .
Convection Oven Temperature: _____
8. A lasagna recipe directs you to bake at 375°F .
Convection Oven Temperature: _____
9. A pizza recipe directs you to bake at 400°F .
Convection Oven Temperature: _____
10. A zucchini bread recipe directs you to bake at 350°F .
Convection Oven Temperature: _____

Calculating Convection Time

Directions: Figure the convection oven time for each of the following stated baking times. Write your answers on the blanks provided. **Reduce the original baking time by $\frac{1}{2}$ to $\frac{1}{3}$ -less time to determine the baking time range.** To do this, calculate the baking time for the first column by multiplying the original time by $\frac{1}{2}$. In the second column, multiply the original time by $\frac{2}{3}$. Be sure to round your answers up to the next highest whole minute.

	$\frac{1}{2}$ Time		$\frac{2}{3}$ Time
1. 20 min.	_____ min.	to	_____ min.
2. 30 min.	_____ min.	to	_____ min.
3. 40 min.	_____ min.	to	_____ min.
4. 45 min.	_____ min.	to	_____ min.
5. 1 hr.	_____ min.	to	_____ min.
6. 15 min.	_____ min.	to	_____ min.
7. 35 min.	_____ min.	to	_____ min.
8. 55 min.	_____ min.	to	_____ min.
9. 75 min.	_____ min.	to	_____ min.
10. 85 min.	_____ min.	to	_____ min.
11. 50 min.	_____ min.	to	_____ min.
12. 1 hr., 45 min.	_____ min.	to	_____ hr., _____ min.
13. 2 hrs., 30 min.	_____ hr., _____ min.	to	_____ hr., _____ min.
14. 3 hrs., 10 min.	_____ hr., _____ min.	to	_____ hr., _____ min.
15. 4 hrs., 15 min.	_____ hr., _____ min.	to	_____ hr., _____ min.

Costing Form

Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price* for the recipe your instructor provides.

Recipe:		Recipe Yield:	Cost per Serving:	
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up=
		/		Calculate Mark-Up (Total Cost x Mark-Up)
		/		
		/		
		/		Calculate the Total Selling Price (Total-Cost + Mark- Up)
		/		
		/		
		/		Calculate Cost per-Serving (Total-Cost ÷ Recipe Yield)
		/		
		/		
		/		
		/		
			Total Cost:	

Using Scoops and Ladles

Directions: List the common use for each scoop and ladle on the blanks provided.

<u>Utensil</u>	<u>Size</u>	<u>Common Usage</u>
1. A #8 Scoop yields 8 Tbsp. ($\frac{1}{2}$ cup)		_____
2. A #12 Scoop yields $5\frac{1}{3}$ Tbsp. ($\frac{1}{3}$ cup)		_____
3. A #16 Scoop yields 4 Tbsp. ($\frac{1}{4}$ cup)		_____
4. A #20 Scoop yields 3 Tbsp.		_____
5. A #24 Scoop yields $2\frac{2}{3}$ Tbsp.		_____
6. A #30 Scoop yields 2 Tbsp.		_____
7. A #40 Scoop yields $1\frac{2}{3}$ Tbsp.		_____
8. A #60 Scoop yields 1 Tbsp.		_____
9. A #70 Scoop yields $1\frac{1}{2}$ –2 tsp.		_____
10. A #1 Ladle yields 1 fl. oz.		_____
11. A #2 Ladle yields 2 fl. oz.		_____
12. A #3 Ladle yields 3 fl. oz.		_____
13. A #4 Ladle yields 4 fl. oz.		_____
14. A #6 Ladle yields 6 fl. oz.		_____
15. A #8 Ladle yields 8 fl. oz.		_____

Directions: Use the scoops and ladles information above to answer the following questions. Write your answers on the blanks provided.

- _____ 16. A cook prepared 6 qts. of muffin batter. How many muffins can be made using a #16 scoop?
- _____ 17. A cook has $1\frac{1}{2}$ gallons of sauce. How many servings will the sauce yield if a #6 ladle is used?
- _____ 18. A banquet is to be served to 120 people. If a #2 ladle is used for the gravy, how much gravy should be prepared?
- _____ 19. A baker needs to prepare 12 dozen chocolate chip cookies. If they are made using a #60 scoop, how much batter should be prepared?
- _____ 20. How many servings are there in 3 qts. of garlic-mashed potatoes if each customer is given two #12 scoops?

Math Scoops

Directions: Read each of the word problems below. Write your answers to the question on the blanks provided.

1. A baker made 2 qts. of chocolate pudding. A serving is $\frac{1}{2}$ cup
 - A. What scoop should you use? _____
 - B. How many servings will it yield? _____
2. A baker made 3 qts. of chocolate pudding. A serving is $\frac{1}{2}$ cup
 - A. What scoop should you use? _____
 - B. How many servings will it yield? _____
3. A cook prepared 3 qts. of chicken casserole. A serving is $\frac{2}{3}$ cup
 - A. What scoop should you use? _____
 - B. How many servings will it yield? _____
4. A cook prepared $4\frac{1}{2}$ qts. of chicken casserole. A serving is $\frac{2}{3}$ cup
 - A. What scoop should you use? _____
 - B. How many servings will it yield? _____
5. A baker prepared 1 gal. of muffin mix. A portion is $\frac{1}{4}$ cup
 - A. What scoop should you use? _____
 - B. How many muffins will it yield? _____
6. A baker prepared $\frac{3}{4}$ qt. of muffin mix. A portion is $\frac{1}{4}$ cup
 - A. What scoop should you use? _____
 - B. How many muffins will it yield? _____
7. A caterer prepared 1 qt. of sauerkraut ball mixture. A sauerkraut ball equals $\frac{1}{2}$ Tbsp.
 - A. What scoop should you use? _____
 - B. How many sauerkraut balls will it yield? _____
8. A caterer prepared 2 qts. of sauerkraut ball mixture. A sauerkraut ball equals $\frac{1}{2}$ Tbsp.
 - A. What scoop should you use? _____
 - B. How many sauerkraut balls will it yield? _____
9. A baker prepared $1\frac{1}{2}$ qts. of chocolate chip cookie dough. Each cookie equals 1 Tbsp.
 - A. What scoop should you use? _____
 - B. How many chocolate chip cookies will it yield? _____
10. A baker prepared 1 qt. of chocolate chip cookie dough. Each cookie equals 2 Tbsp.
 - A. What scoop should you use? _____
 - B. How many chocolate chip cookies will it yield? _____

Costing an Invoice—Weight/Unit Prices

Directions: Use the information provided to fill in the weight unit prices on this invoice form.

Item	Pack Price	Volume Unit Price	Weight Unit Price
Stewed tomatoes	\$3.20/12 cups/6½ lbs. can	\$0.26/cup	/oz.
Cream of mushroom soup	\$2.58/6 cups/3¼ lbs. can	\$0.43/cup	/oz.
Polish sausage links	\$16.95/10 lbs. (8 ct. per lb.)	\$0.21 each	/lb.
Turkey breast (cooked, diced)	\$2.34/1 lb./3 cups	\$0.78/cup	/oz.
Refried beans	\$20.00/6 #10 cans (#10 can = 6½ lbs.)	\$0.20/cup	/lb.
Elbow macaroni	\$3.89/10 lbs. (1 lb. = 4 cups)	\$0.10/cup	/lb.
Spaghetti	\$5.35/2 lbs./1¾ qt.	\$0.76/cup	/lb.
Milk	\$2.63/gal. (1 gal. = 8.5 lbs.)	\$0.16/cup	/oz.
Cake flour	\$3.59/5 lbs. (1 lb. = 4 cups)	\$0.18/cup	/lb.
Sugar	\$11.53/25 lbs. (1 lb. = 2 cups)	\$0.23/cup	/lb.
Cherry pie filling	\$11.35/#10 can/12 cups (#10 can = 6½ lbs.)	\$0.95/cup	/lb.
Chocolate chips	\$13.40/5 lbs. (1 lb. = 3 cups)	\$0.89/cup	/lb.
Walnut halves	\$17.00/5 lbs./20 cups	\$0.85/cup	/lb.
American cheese slices	\$10.25/5 lbs./120 slices	\$0.02/slice	/lb.
Grated Cheddar cheese	\$12.50/5 lbs./20 cups	\$0.63/cup	/lb.
Cream cheese	\$5.17/3 lbs./6 cups	\$0.86/cup	/lb.
Parmesan cheese	\$18.60/5 lbs. (1 lb. = 5⅔ cups)	\$0.66/cup	/lb.
Mayonnaise	\$4.90/gal. (1 gal. = 7.4 lbs.)	\$0.31/cup	/oz.

Costing a Quick-Service Meal

Directions: You will need a copy of the *Math Activity #13 Costing Form* for each of the following recipes. Record the recipe name, recipe yield, ingredients, and amounts on the costing form. Use the *Costing Information* to calculate the *Unit Cost*, *Extended Cost*, and *Total Cost*. Calculate the *Cost per Serving* and the *Selling Price* using a 30% mark-up for each recipe. Calculate and record the *Selling Price* of the entire meal at the bottom of this activity.

Menu: *Grilled Chicken Sandwich with Fresh Fruit Medley.*

Grilled Chicken Sandwich **Yield:** 4 Sandwiches **Portion:** 1 Sandwich

Ingredients	Amounts	Costing Information
Boneless, skinless chicken breast	24 oz.	1 lb./\$2.67
Provolone cheese	6 oz.	1 lb./\$2.39
Mushrooms, sliced	3 oz.	1 lb. = 7 cups sliced/\$2.25/lb.
Tomato	8 slices	2 tomatoes = 1 lb./\$0.53 (Each tomato = 8 slices)
Leaf lettuce	4 leaves	About 16 leaves per bunch/\$0.77
Low-fat avocado dressing	4 fl. oz.	1 gal./\$7.85
Bread, 7-grain	8 slices	1 loaf = 24 oz./12 slices/\$1.54
Pickles, sliced, drained	4 oz.	6 oz. = 1 cup/\$0.25

Fresh Fruit Medley **Yield:** 8 Servings **Portion:** $\frac{3}{4}$ cup each

Ingredients	Amounts	Costing Information
Strawberries, whole fresh	1½ cup	3 cups = 1 lb./\$2.59
Bananas, diced	1 cup	3 cups diced = 1 lb./\$0.65
Melon, cubed	$\frac{1}{4}$ melon	1 small = 1½ lbs./\$3.99
Grapes, whole, stemmed	$\frac{1}{2}$ cup	3 cups = 1 lb./\$2.99
Orange, sections	1 cup	8 medium = 1 qt./lb./\$1.20
Pineapple, fresh cubed	1 cup	2 lbs. whole = 2 cups cubed/\$4.99

Record the *Selling Price* of a serving from each recipe to calculate the *Menu Price* of the Meal.

Menu Selection	Selling Price
Grilled Chicken Sandwich	
Fresh Fruit Medley	
Total Menu Price	

Costing a Casual Dining Meal

Directions: The following dinner meal is a selection from a local casual dining restaurant for a party of four adults who enjoy healthful foods. You will need a copy of the **Math Activity #13 Costing Form** for each of the following recipes. Record the *recipe name, recipe yield, ingredients, and amounts* on the costing form. Use the *Costing Information* to calculate the *Unit Cost, Extended Cost, and Total Cost*. (Attach your Costing Forms to this activity.) Calculate the *Cost per Serving* and the *Selling Price* using a 30% mark-up for each recipe. Calculate the *Selling Price per Serving* of the entire meal at the end of this activity.

Menu Selection: Mixed Baby Greens with Low-Fat Dressing, Citrus Red Snapper, Wild Rice Blend, Grilled Vegetable Kabob, Poached Pear with Fresh Berries

Salad: Mixed Baby Greens with Low-Fat Dressing **Recipe Yield:** 4 Servings

Ingredients	Amounts	Costing Information
Baby greens	8 oz.	1 lb./\$3.50
Roma tomatoes, diced	3 ct.	1 lb. = 5 small/\$0.75
Parmesan cheese, grated	¼ cup	3 oz. = 1 cup grated/\$0.60
Carrots, shredded	¼ cup	1 lb. = 3½ cups shredded/\$0.34
Cucumber, sliced	½ cup	1 lb. = 2 medium = 4 cups sliced/\$2.00
Croutons	¼ cup	5 oz. = 3 cups/\$1.59
Low-fat dressing	½ cup	1 gal. = \$6.75

Entrée: Citrus Red Snapper **Recipe Yield:** 4 Servings

Ingredients	Amounts	Costing Information
Red snapper, filet	4 ct., 6 oz.	1 lb./\$3.37
Lemon zest and juice	¼ ct.	1 lb. = 4–6 ct./\$2.25
Lime zest and juice	¼ ct.	1 lb. = 6–8 ct./\$2.39
Orange zest and juice	¼ ct.	1 lb. = 3 medium/\$0.88
Fresh garlic, thinly sliced	1 Tbsp.	2 cloves = 2 tsp. sliced/\$0.15
Seasonings	2 tsp.	1 Tbsp./\$0.09
Green onion, chopped	3 Tbsp.	1 bunch = 6–8 ct. = 1 cup sliced white and green/\$0.36
Green chili, finely chopped	2 tsp.	4½ oz. = 1 cup/\$0.75
Olive oil	2 Tbsp.	1 gal./\$23.30

Rice: Wild Rice Blend **Recipe Yield:** 4 Servings

Ingredients	Amounts	Costing Information
Wild rice, cooked	1 cup	1 cup uncooked = 3 cups cooked/\$1.25
Basmati rice, cooked	1 cup	1 cup uncooked = 3 cups cooked/\$0.75
Pine nuts	2 Tbsp.	2½ oz. = 2/3 cup/\$1.50
Onion, small diced	2 oz.	1 lb. = 3 medium/\$0.34
Rosemary, finely chopped	2 tsp.	1 Tbsp./\$0.09
Butter	1 Tbsp.	2 cups = 1 lb./\$2.15
Seasonings	2 tsp.	1 Tbsp./\$0.09

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Costing a Casual Dining Meal *(continued)*

Vegetable: Grilled Vegetable Kabob

Recipe Yield: 4 Servings

Ingredients	Amounts	Costing Information
Eggplant	½ ct.	1 medium = 1¼ lbs. = 8 slices/\$1.25
Yellow squash	1 ct.	1 lb. = 3 medium/\$1.05
Red onion	¼ ct.	1 lb. = 3 medium/\$0.44
Green pepper	½ ct.	22 lb. = 60-65 ct./\$14.64
Portobello mushrooms	1 large cap	5 lb. = 15 large caps/\$11.48
Garlic, minced	1 Tbsp.	2 cloves = 1 tsp. minced/\$0.15
Fresh basil	1 Tbsp.	1 Tbsp./\$0.09
Seasoning	2 tsp.	1 Tbsp./\$0.09
Balsamic vinegar	2 Tbsp.	1 gal./\$8.07
Olive oil	2 Tbsp.	1 gal./\$23.30

Dessert: Poached Pear with Fresh Berries

Recipe Yield: 4 Servings

Ingredients	Amounts	Costing Information
Pears	4 ct.	1 lb. = 3–4 ct./\$1.45
Raisins	½ cup	6 oz. = 1 cup/\$0.75
Apple juice, concentrate	¼ cup	8 oz. = 1 cup/\$0.75
Cinnamon stick	½ stick	Each stick/\$0.50
Flavorings	1 Tbsp.	1 Tbsp./\$0.09
Pecans, whole	¼ cup	1 lb. = 2¼ cups nut meats/\$3.50
Fresh berries	1 cup	1 pt./\$2.99

Directions: Record the *Selling Price per Serving* of each recipe and then calculate the *Total Menu Price* of the meal. (Total Menu Selling Price ÷ 4 Servings = Selling Price per Serving)

Menu Selection	Selling Price per Serving
Mixed Baby Greens with Low-Fat Dressing	
Citrus Red Snapper	
Wild Rice Blend	
Grilled Vegetable Kabob	
Poached Pear with Fresh Berries	
Total Menu Price	

Costing a Cold Platter Buffet

Directions: Assume that you have to cost out the Cold Platter Buffet for the Spring Women's Volleyball banquet at your school. Fifty teens and adults will be served at 11:00 a.m. You will need a copy of the **Math Activity #13 Costing Form** for each of the following recipes. Record the *recipe name*, *recipe yield*, *ingredients*, and *amounts* on the costing form. Use the *Costing Information* to calculate the *Unit Cost*, *Extended Cost*, and *Total Cost*. Attach your completed Math Activity 13 Costing Forms for each of the recipes to this activity. At the end of this activity, calculate the *Selling Price* of the Cold Platter for 50 people. Then figure the *Selling Price per Individual*. (Note: Some answers will vary slightly depending on how costing information is used to determine unit costs.)

Menu: Crudit , Fancy Sandwiches, Pasta Salad, Fresh Fruit Platter, and Dessert Tray.

Crudit :

Recipe Yield: 50 Servings

Ingredients	Amounts	Costing Information
Carrot, julienne	3 lbs.	1 lb. = 2½ cups/\$0.34
Red pepper, julienne	3 ct.	1 lb. = 4 medium/\$3.47
Green beans, whole	1 lb.	5 lbs. = \$8.26
Radishes	1¼ lbs.	1 lb./\$0.63
Broccoli	1 head	16 lbs. = 14–18 count/\$14.46
Celery sticks	2 bunches	6 ct./\$7.85
Cherry tomatoes	1 qt.	1 pt./\$1.25
Vegetable dip	1 qt.	1 lb. = 2 cups/\$1.35

Fancy Sandwiches: Chicken Salad in Mini Pita Pockets

Recipe Yield: 30 mini sandwiches

Ingredients	Amounts	Costing Information
Mini pita breads	30 ct.	1 dozen/\$1.10
Chicken, cooked, diced	5 lbs.	1 lb./\$2.35
Celery, diced	3 cups.	1 lb. = 1 qt./\$0.79
Red grapes, diced	3 cups	1 lb. = 2⅔ cups/\$1.40
Slivered almonds	3 oz.	5 oz. = 1 cup/\$1.25
Parsley, minced	½ cups	1 oz. = ¾ cup/\$0.24
Seasonings	3 Tbsp.	1 Tbsp. = \$0.09
Mayonnaise	1½ cup	1 gal. = \$4.90
Lemon juice	2 Tbsp.	1 qt. = \$1.08
Sour cream	¾ cup	1 pt. = \$1.42
Leaf lettuce	2 heads	12 ct. = \$9.27

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Costing a Cold Platter Buffet *(continued)*

Fancy Sandwich: Glazed Ham Roll-Up

Recipe Yield: 20 sandwiches

Ingredients	Amounts	Costing Information
Crêpes	20 ct.	Each \$0.30
Cream cheese	2 lbs.	3 lbs./\$5.15
Sun-dried tomato pesto	½ lb.	8 oz./\$3.89
Shredded co-jack cheese	1 lb.	5 lbs./\$10.30
Chopped green olives	1 cup	#10 can = 12 cups/\$5.13
Honey glazed ham	2 lbs.	2½ lbs./\$12.65

Fancy Sandwich: Roasted Turkey

Recipe Yield: 20 sandwiches

Ingredients	Amounts	Costing Information
Wheat bread	20 slices	1 loaf = 24 oz./20 slices/\$1.40
Roasted turkey	3 lbs.	1 lb./\$2.34
Swiss cheese	1 lb.	5 lbs./\$13.26
Alfalfa sprouts	3 oz.	4 oz./\$1.99
Tomatoes	5 ct.	1 lb. = 2–3 ct./\$0.53
Flavored butter	½ cup	2 cups = 1 lb./\$2.15

Salad: Pasta Salad

Recipe Yield: 40 servings

Ingredients	Amounts	Costing Information
Tri-colored bow-tie pasta	4 lbs.	2½ lbs./\$2.25
Grape tomatoes	1 lb.	1 lb./\$1.73
Carrot, grated	½ lb.	50 lbs./\$17.12
Cauliflower, florets	½ head	1 head/\$2.19
Green olives	1 cup	1 gal./\$7.85
Black olives, sliced	1 cup	1 gal./\$4.50
Green onions, diced	½ cup	1 bunch = 1 cup diced/\$0.36
Parsley, finely chopped	½ cup	1 oz. = ¾ cup/\$0.24
Italian dressing	1 qt.	1 gal./\$7.18

Fruit: Fresh Fruit Platter

Recipe Yield: 50 servings

Ingredients	Amounts	Costing Information
Watermelon, sliced	1 whole	1 whole/\$5.99
Cantaloupe, cubed	3 whole	1 whole/\$1.30
Strawberries, whole	2 pts.	1 pt./\$2.09
Pineapple, large chunks	2 whole	1 whole/\$2.69
Oranges, sliced	6 ct.	72 ct./\$20.88
Grapes	1½ lbs.	5 lbs./\$6.93
Cherries, pitted	½ lb.	1 lb./\$2.99
Kiwi, sliced	4 ct.	36 ct./\$6.64

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Costing a Cold Platter Buffet *(continued)*

Dessert Tray: Assorted Pre-Baked Selections

Recipe Yield: 50 Servings

Ingredients	Amounts	Costing Information
Chocolate-frosted brownies	36 (2"×4") bars	1 sheet (12"×16")/\$12.18
Peanut butter cookies	20 ct.	1 case = 240 ct./\$38.40
Lemon bars	24 (2"×4") bars	1 sheet (12"×16")/\$14.78
Custard-filled cream puffs	20 ct.	50 ct./\$20.75
Assorted mini-cheesecakes	50 ct.	30 ct./\$15.32
Petit fours	20 ct.	60 ct./\$25.75

Directions: Record the *Total Cost* of each platter and add them up to calculate the **Total Extended Cost**. Next, calculate the **25% mark-up**. Add the *mark-up* to the *Total Cost of the Cold Platters* to determine the *Selling Price* of the Cold Platter Buffet for 50 people. Then calculate the *Selling Price per Individual*.

Cold Platter	Total Cost of Platter
Crudité	
Fancy Sandwich: Chicken Salad in Mini Pita Pockets	
Fancy Sandwich: Glazed Ham Roll-Ups	
Fancy Sandwich: Roasted Turkey	
Pasta Salad	
Fresh Fruit Platter	
Dessert Tray	
Total Extended Cost of the Cold Platters	
25% Mark-up (Total Extended Cost × .25)	
Selling Price of Cold Platter Buffet (Total Extended Cost + Mark-Up)	
Selling Price Per Individual (Selling Price ÷ 50 People)	

Costing Tuna Noodle Casserole

Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price*.

Recipe:	Tuna Noodle Casserole	Recipe Yield:	6	Cost per Serving:
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up = 20%
Noodles	3 cup	\$0.32/cup		Calculate Mark-Up (Total Cost x Mark-Up)
Tuna fish	7 oz.	\$0.08/oz.		
Mayonnaise	½ cup	\$0.31/cup		
Sliced celery	1 cup	\$0.33/cup		Calculate the Total Selling Price (Total-Cost + Mark-Up)
Chopped onion	⅓ cup	\$0.11/cup		
Chopped green peppers	¼ cup	\$0.26/cup		
Chopped pimientos	¼ cup	\$2.18/cup		Calculate Cost per-Serving (Total-Cost ÷ Recipe Yield)
Salt	1 tsp.	\$0.03/tsp.		
Cream of celery soup	10 ½ oz.	\$2.76/52oz.		
Milk	½ cup	\$0.17/cup		
American cheese, grated	1 cup	\$2.50/1 lb./4 cups		
			Total Cost:	

Costing Slaw

Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price*.

Recipe:	Slaw	Recipe Yield:	6	Cost per Serving:
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up = 25%
Sugar	1/3 cup	\$0.23/cup		Calculate Mark-Up (Total Cost x Mark-Up)
Garlic salt	1 tsp.	\$0.03/tsp.		
Celery seed	1 tsp.	\$0.03/tsp.		
Vinegar	3 Tbsp.	\$0.09/Tbsp.		Calculate the Total Selling Price (Total-Cost + Mark-Up)
Lemon juice	3 Tbsp.	\$0.02/Tbsp.		
Cabbage	3 cups	\$0.12/cup		
Green pepper	1/4 cup	\$0.50/cup		Calculate Cost per-Serving (Total-Cost ÷ Recipe Yield)
Celery	1 stalk	\$0.10/stalk		
Green onions	4 ct.	\$0.07/each		
			Total Cost:	

Costing Peanut Butter Cookies

Directions: Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price*.

Recipe:	Slaw	Recipe Yield:	6	Cost per Serving:
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up = 25%
Shortening	1 cup	\$0.40/cup		Calculate Mark-Up (Total Cost x Mark-Up)
Peanut butter	1 cup	\$1.53/cup		
Sugar	1 cup	\$0.23/cup		
Brown sugar	1 cup	\$0.34/cup		Calculate the Total Selling Price (Total Cost + Mark-Up)
Eggs	3 Tbsp.	\$0.06/each		
Vanilla	1 tsp.	\$0.03/tsp.		
Flour	1 ½ cup	\$0.04/cup		Calculate Cost per-Serving (Total Cost ÷ Recipe Yield)
Salt	½ tsp.	\$0.03/tsp.		
Baking soda	¾ tsp.	\$0.03/tsp.		
Baking powder	½ tsp.	\$0.03/tsp.		
Peanuts	⅓ tsp.	\$0.24/tsp.		
			Total Cost:	

Costing Brownies

Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price*.

Recipe:	Brownies	Recipe Yield:	18	Cost per Serving:
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up = 25%
Flour	½ cup	\$0.04/cup		Calculate Mark-Up (Total Cost × Mark-Up)
Baking powder	1 tsp.	\$0.03/tsp.		
Cocoa	2 Tbsp.	\$0.09/Tbsp.		
Margarine	½ cup	\$0.24/cup		Calculate the Total Selling Price (Total-Cost + Mark-Up)
Granulated sugar	1 cup	\$0.23/cup		
Eggs	2	\$0.06/each		
Walnuts	4 oz.	\$0.21/oz.		Calculate Cost per Serving (Total Cost ÷ Recipe Yield)
Vanilla	1 tsp.	\$0.03/tsp.		
			Total Cost:	

Costing Sour Cream Coffee Cake

Directions: Use the following form to calculate the *Total Cost*, the *Cost per Serving*, and the *Selling Price*.

Recipe:	Sour Cream Coffee Cake	Recipe Yield:	Two 9-in. cakes	Cost per Serving:
Ingredients	Amounts	Unit Cost	Extended Cost	Mark-Up = 25%
Margarine	1 cup and 2 Tbsp.	\$0.24/cup		Calculate Mark-Up (Total Cost x Mark-Up)
Sugar	1 ³ / ₄ cup and 2 Tbsp.	\$0.23/cup		
Eggs	3	\$0.06/each		
Almond extract	½ tsp.	\$0.03/tsp.		Calculate the Total Selling Price (Total Cost + Mark-Up)
Vanilla	½ tsp.	\$0.09/tsp.		
Flour	3 ³ / ₄ cup	\$0.04/cup		
Baking soda	1 ½ tsp.	\$0.03/tsp.		Calculate Cost per Serving (Total Cost ÷ Recipe Yield)
Sour cream	1 cup	\$0.75/cup		
Cherry pie filling	7 oz.	\$0.09/oz.		
Cinnamon	³ / ₄ tsp.	\$0.03/tsp.		
Powdered sugar	2 cup	\$0.14/cup		
			Total Cost:	