

## Restaurant Math Calculations (Key)

Calculate the correct answer for the word problems. Be sure to show your work.

1. The dishwasher at a restaurant is loaded with the same number of dishes every time it is used. The table shows the total number of dishes washed as a function of the number of times the dishwasher is used.

Restaurant Dishwasher	
2	56
4	112
6	168
8	224

Based on the data in the table, what is the total number of dishes that will have been washed when the \_\_\_\_\_ dishwasher is used 12 times?

- a. 280
- b. 308
- c. 28
- d. 336**

Based on the first load:  
 $56 \div 2 = 28$   
 $28 \times 12 = 336$

2. Jacob runs a Chinese food restaurant that sells eggrolls. The business makes 65% profit on every eggroll it sells. In one day, 740 eggrolls were sold for a total profit of \$841.75. What was the selling price of each eggroll?

$$\text{Selling Price} = \frac{\text{Profit}}{N \times R}, W$$

decimal.

- a. \$2.00
- b. \$1.75**
- c. \$1.14
- d. \$0.65

$740 \text{ eggrolls} \times .65 = 481$   
 $\$841.75 \div 481 = \$1.75$

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3. Each time you fill up a drink from the soda fountain, it costs \$.27. If you charge \$2.29 for a fountain drink and have free refills, what is your percentage profit on a customer that gets two free refills?  
Hint: remember order of operation

$$\text{Percentage profit} = \frac{\text{cost of soda} - (\text{price per refill}) * (\text{number of total sodas served})}{\text{cost of soda}} * 100$$

- a. 65%
- b. 76%
- c. 148%
- d. 175%

$$\begin{aligned} & \$0.27 \times 3 = \$0.81 \\ & \$2.29 - \$0.81 = \$1.48 \\ & \$1.48 \div \$2.29 = \$0.646 \\ & \$0.646 \times 100 = 65\% \end{aligned}$$

4. Cynthia is using her recipe to cook rice at the restaurant. If the recipe originally calls for 1 cup of rice, how many pounds of rice will she need to cook to feed 100 people if her recipe serves four?

$$1 \text{ cup} = 8 \text{ ounces} \quad 1 \text{ pound} = 16 \text{ ounces}$$

$$\text{Ounces of rice per serving} = \frac{\text{ounces of rice in recipe}}{\text{number of servings recipe makes}}$$

$$\text{Total pounds of rice needed} = \frac{\text{number of people} * \text{ounces of rice per serving}}{16}$$

- a. 50 pounds
- b. 200 pounds
- c. 12.5 pounds
- d. 800 pounds

$$\begin{aligned} & 8 \text{ ounces} \div 4 \text{ servings} = 2 \text{ ounces of rice per serving} \\ & 100 \text{ people} \times 2 \text{ ounces} = 200 \text{ ounces} \\ & 200 \text{ ounces} \div 16 \text{ ounces} = 12.5 \text{ pounds} \end{aligned}$$

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5. A restaurant uses 15 pounds of bacon per day. There are 31 days this month. If bacon is purchased in 15 pound cases at \$55.20/2, how much did the restaurant spend on bacon this month?

$$C(x) = \frac{55.20}{2} x$$

- a. \$27.60  
b. \$414.00  
c. \$12,834.00  
d. \$855.60

$$\begin{aligned} \$55.20 \div 2 &= \$27.60 \\ \$27.60 \times 31 \text{ days} &= \$855.60 \end{aligned}$$

6. A restaurant uses 1.5 pounds of cheese per day. There are 30 days this month. If cheese is purchased in 5 pound bags at \$99.51/6, how much did the restaurant spend on cheese this month?

Use this equation to find the cost for using x pounds of cheese:

$$C(x) = \frac{99.51/6}{5} x$$

- a. \$45.00  
b. \$3.32  
c. \$149.27  
d. \$4.98

$$\begin{aligned} \$99.51 \div 6 &= \$16.585 \\ \$16.585 \div 5 &= \$3.17 \\ \$3.17 \times 30 \text{ days} &= \$99.51 \\ \$99.51 \times 1.5 \text{ pounds per day} &= \$149.265 = \$149.27 \end{aligned}$$