

Additional Earnings



MATH ON THE JOB

The paintings, sculptures, and carvings of over 40 Nova Scotia folk artists are displayed in the Black Sheep Gallery in Jeddore, Nova Scotia. The gallery, located in a converted fish plant, is owned and operated by Audrey Sandford. Audrey grew up near Cobourg, Ontario, and attended the Ontario College of Art for two years. Along with operating her gallery, she is also responsible for maintaining its website, as well as advertising and promoting the gallery.

"I use math in my work to calculate prices, taxes, framing and displays, shipping costs, and crate or box sizes. When I sell a piece of art that I have taken on consignment, the costs of framing any pictures or manufacturing any museum mounts will be added to the selling price of the item and recovered," Audrey says.

Some art gallery employees earn a **bonus** as well as a base salary. Assume Audrey pays an employee a bonus of 3% of the sales price when a work is sold to a client. If the employee sells a customer a Joe Norris painting for \$8500.00, what bonus will she earn?



Audrey selects, purchases, and prices all of the art displayed in her gallery and on her website.

Bonus

$$8500 \times 0.03 = \$255.00$$

SOLUTION

Calculate the bonus earned on the sale.

$$\$8500.00 \times 0.03 = \$255.00$$

The employee will earn \$255.00 on the sale of a painting.



TIPS...

It is common for people in service industry jobs to earn tips from satisfied customers.

NOTE: a sign of appreciation





Bonus

extra pay earned when certain conditions of employment have been met or exceeded



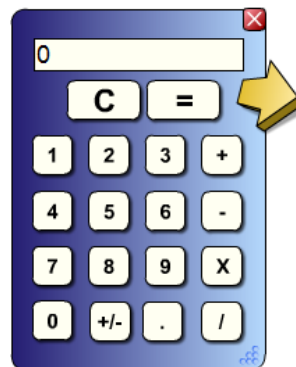
Shift Premium

extra payment
for
non-standard
work hours



Other Incentives...

- danger pay
- isolation pay
- northern allowance



EX #1: Your restaurant gives 5% of the tips received in a shift to employees working in the kitchen. If \$2100.00 is received in tips, and there are 5 people working in the kitchen, how much will each person receive?

TIPS?

$$\begin{array}{r} \$2100 \times 0.05 \\ \$105 \end{array}$$

Share...

$$\begin{array}{r} \underline{\$105} \\ 5 \\ \$21 \end{array}$$

EXAMPLE #2:

Wendy has a summer job working as a waitress. She earns \$9.50 /hr plus tips. Calculate her **gross pay** if she worked 48 hours one week and kept 85 % of her \$234.50 in tips. She receives time and one half for hours worked beyond 40.

$$\begin{array}{l} \text{Reg pay } \$9.50/\text{hr} \times 40\text{hr} = \$ 380.00 \\ \text{O.T pay } \$9.50 \times 1.5 \times 8\text{hr} = \$ 114.00 \\ \text{Tips } \$234.50 \times 0.85 = \$ 199.33 \\ \hline \$ 693.33 \leftarrow \text{Gross pay} \end{array}$$

Example #3...

2. You worked a four-hour shift as a server and your customer bills totalled \$2500.00 before tips. Your rate of pay is \$10.00/h.

If all your customers tipped you 10%, how much did you earn an hour in wages and tips?

Tips?

$$\$2500 \times 0.10$$

$$\$250$$

Tips/hr

$$\frac{\$250}{4}$$

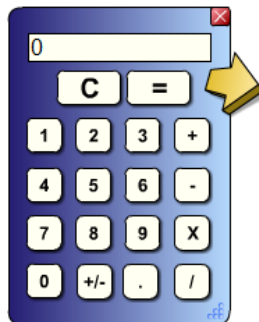
$$4$$

$$\$62.5$$

Hourly Wages?

$$\$62.5 + \$10.00$$

$$\$72.5$$



EXAMPLE #4...

Kyle works in a bookstore selling books. He also sells customers reward cards for \$30.00 that will give them a discount on future purchases. His employer gives him a bonus of 10% of the amount received if he sells more than 20 cards in a month. If his regular wages are \$1883.77 and he sells 27 reward cards one month, what will Kyle's wages be including the bonus?

Reward Cards

$$27 \times \$30 \\ \$810$$

10% Bonus

$$\$810 \times 0.10 \\ \$81$$

Monthly Wages

$$\$1883.77 + \$81 \\ \$1964.77$$

$$\$ 453.76 \text{ weekly}$$



LAST one...

Jacob works as a stock clerk for a grocery store in Labrador City, NL. His regular pay is \$12.00 an hour, but he earns a shift premium of \$2.00 an hour for any hours he works between 5:00 pm and 8:00 am. Jacob also earns 1.5 times his pay rate in overtime for any hours he works above 35 hours a week. His timesheet is shown below.

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|
| 12:00 am – 8:00 am | 12:00 am – 8:00 am | 4:00 pm – 12:00 am | 6:00 am – 11:00 am | 6:00 am – 11:00 am | 8:00 am – 3:00 pm |

Regular time:

$$\$12.00$$

$$\underline{1+3+3+1}$$

$$8 \times 12 = 96$$

Regular time + premium:

$$\$12.00 + 2 = \$14.00$$

$$\underline{8+8+7+2+2}$$

$$27 \times \$14 = \$378$$

Overtime:

$$\$12.00 \times 1.5 = \$18.00$$

$$\underline{6 \quad 3 \quad 3}$$

$$6 \times 18 = 108$$



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Regular time: \$12.00 | Regular time + premium: \$12.00 + 2 = \$14.00 | Overtime: \$12.00 x 1.5 = \$18.00

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|--|--|---|
| 12:00 am – 8:00 am | 12:00 am – 8:00 am | 4:00 pm – 12:00 am | 6:00 am – 11:00 am | 6:00 am – 11:00 am | 8:00 am – 3:00 pm |
| 12 am 1 am 2 am 3 am 4 am 5 am 6 am 7 am 8 am | 12 am 1 am 2 am 3 am 4 am 5 am 6 am 7 am 8 am | 4 pm 5 pm 6 pm 7 pm 8 pm 9 pm 10 pm 11 pm 12 am | 6 am 7 am 8 am 9 am 10 am 11 am | 6 am 7 am 8 am 9 am 10 am 11 am | 8 am 9 am 10 am 11 am 12 pm 1 pm 2 pm 3 pm |

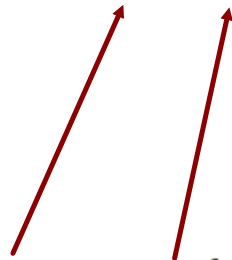
Premium Hours = • hours
 Regular Hours = • hours
 Total # of hours = • hours

Overtime: - •

Regular **paid** Hours:

$$\begin{array}{r} 14 - 6 \\ 8 \end{array}$$

Premium Hours: 27 hours x \$14.00 = \$378
 Regular Hours: 8 hours x \$12.00 = 96
 Overtime Hours: 6 hours x \$18.00 = 108
 \$582



What percentage of his weekly earnings are **paid** at the regular rate?

Formula:

$\frac{\text{regular **paid** hours}}{\text{total \# of hours}}$

$$\begin{array}{r} 96 \\ 582 \\ 0.16 \\ 16\% \end{array}$$

DISCUSS THE IDEAS

EARNING TIPS



Servers often share tips with kitchen staff.

People who work in restaurants usually earn some of their income in the form of tips, often paid in addition to the minimum wage. Because many people's first jobs are as servers, this is an important type of income to understand. Many people also make a lifelong career in the restaurant industry. Consider the following questions about income from tips.

1. Your restaurant gives 5% of the tips received in a shift to employees working in the kitchen. If \$2100.00 is received in tips, and there are 5 people working in the kitchen, how much will each person receive?
2. You worked a four-hour shift as a server and your customer bills totalled \$2500.00 before tips. Your rate of pay is \$10.00/h.
 - a) If all your customers tipped you 10%, how much did you earn an hour in wages and tips?
 - b) If all your customers tipped you 15%, how much did you earn an hour in wages and tips?
 - c) If all your customers tipped you 20%, how much did you earn an hour in wages and tips?
3. Do you think certain working hours would be better for earning tips? Which hours? Why?

SOLUTIONS

1. Convert 5% to a decimal and calculate the amount to be shared by the kitchen staff.

$$0.05 \times \$2100.00 = \$105.00$$

Since the tips are shared by 5 people, divide the total tips by 5.

$$\frac{\$105.00}{5} = \$21.00$$

Each person will receive \$21.00.

2. a) $\$2500.00 \times 0.10 = \250.00

$$\$250.00 \div 4 = \$62.50$$

$$\$62.50 + \$10.00 = \$72.50$$

You earned \$72.50 an hour.

- b) $\$2500.00 \times 0.15 = \375.00

$$\$375.00 \div 4 = \$93.75$$

$$\$93.75 + \$10.00 = \$103.75$$

You earned \$103.75 an hour.

- c) $\$2500.00 \times 0.20 = \500.00

$$\$500.00 \div 4 = \$125.00$$

$$\$125.00 + \$10.00 = \$135.00$$

You earned \$135.00 an hour.

3. Students will likely suggest that the dinner hour would be the busiest time and, therefore, tips would be higher. Also, dinners are generally more expensive and because tips are generally calculated as a percentage of the bill, tips will be higher.



HOMEWORK...

Check out pages 76 and 77
questions 1 - 8

2.3 Build Your Skills Detailed Solutions.pdf



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