

Get out your homework from yesterday and start checking your answers. After we check the homework we will take the Target Check

Classwork - Target Check and Sales Tax and Tips

1) A Girl Scout troop uses 14 flashlight batteries on a three-night camping trip. If they are planning to have another nine-night trip, how many batteries should they bring?

$$\frac{14 \text{ batteries}}{3 \text{ nights}} = \frac{x \text{ batteries}}{9 \text{ nights}} \quad 3x = \frac{126}{3}$$

$x = 42 \text{ batteries}$

2) Three pumps can remove a total of 1860 gallons of water per minute from a flooded mineshaft. How many gallons of water per minute can five pumps remove?

$$\frac{1860 \text{ gal/min}}{3 \text{ pumps}} = \frac{x \text{ gal/min}}{5 \text{ pumps}} \quad 3x = \frac{9300}{3}$$

$x = 3100 \text{ gal/min}$

3) A cookie recipe calls for 3 eggs and makes 4 dozen cookies. Use this information to answer the following questions.

A) Using 12 eggs, how many dozen cookies can you make?

$$\frac{3 \text{ eggs}}{4 \text{ dozen}} = \frac{12 \text{ eggs}}{x \text{ dozen}} \quad \frac{48}{3} = 3x$$

$x = 16 \text{ dozen cookies}$

4) A bag of 5 apples costs \$1.50 at Sam's Orchard.

a. At this same rate, how much would 19 apples cost?

$$\frac{\$1.50}{5 \text{ apples}} = \frac{\$x}{19 \text{ apples}} \quad 5x = 28.5 \quad x = \$5.70$$

b. How many apples could you buy for \$4.20?

$$\frac{\$1.50}{5 \text{ apples}} = \frac{\$4.20}{x \text{ apples}} \quad 1.5x = 21 \quad x = 14 \text{ apples}$$

5) The ratio of boys to girls in a classroom is 4:5. If there are 27 total students in the classroom, how many boys are in the class?

$$\frac{4 \text{ boys}}{5 \text{ girls}} \rightarrow \frac{4 \text{ boys}}{9 \text{ total}} = \frac{x \text{ boys}}{27 \text{ total}} \quad 9x = 108 \quad x = 12 \text{ boys}$$

6) The movie theatre has 250 seats. On a Friday night, the sold tickets for 225 seats. What percent of the seats are full? What percent of the seats are empty?

$$\frac{225 \text{ sold}}{250 \text{ total}} = \frac{x}{100} \quad 250x = 22500 \quad x = 90\%$$

whole = 100

$$100\% - 90\% = 10\% \text{ empty}$$

7) A 7th grade class of 245 voted for class president. 40% voted for Brad and 60% voted for Jane. How many people voted for the winner?

$$\frac{x}{245 \text{ total}} = \frac{60}{100} \quad 100x = 14700 \quad x = 147 \text{ students voted for Jane}$$

8) In a survey, 400 people said they did not know the name of their representative in Congress. If 550 people were surveyed, what percent of people didn't know you their representative was? (round to the nearest tenth)

$$\frac{400 \text{ didn't know}}{550 \text{ total}} = \frac{x}{100}$$

$$550x = \frac{40000}{550}$$

$$x = 72.7\% \text{ didn't know}$$

9) In a class of 25 people, 60% of them say they ride the bus to school. How many people in the class ride the bus to school?

$$\frac{x \text{ ride bus}}{25 \text{ total}} = \frac{60}{100}$$

$$100x = \frac{1500}{100}$$

$$x = 15 \text{ people ride the bus}$$

10) Javier's teacher graded his 16-question quiz. Javier answered 14 of the questions correctly. What percent did Javier get on his quiz?

$$\frac{14 \text{ correct}}{16 \text{ total}} = \frac{x}{100}$$

$$\frac{1400 = 16x}{16}$$

$$x = 87.5\%$$

11) Rochelle buys a shirt on sale for 75% of the original cost. The original cost of the shirt is \$24.95. What was the sale price of the shirt? (round to the nearest cent)

$$\frac{\$x}{\$24.95} = \frac{75}{100}$$

$$100x = \frac{1871.25}{100}$$

$$x = 18.7125 \rightarrow \$18.71$$



Real-World Link

Kayaks Alonso plans to buy a new kayak that costs \$2,100. But when he buys the kayak, it actually costs more because he lives in a county where there is a 7% sales tax.

You can find the amount of tax on an item by multiplying the price by the tax percentage.

1. Circle the amount below that shows the amount of tax Alonso will pay for the kayak.

\$350

\$235

\$147

2. Use the amount of tax from Exercise 1 to fill in the receipt at the right. Then find the total cost Alonso will pay for the kayak.
3. Multiply 1.07 and \$2,100. How does the result compare to your answer in Exercise 2?
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4. On Alonso's kayaking trip, hiring a guide costs \$50. Alonso wants to give the guide a 10% tip. Explain how to find the amount of the tip.

Jimmie's Kayaks	
Kayak	2100
Sales Tax	+147
<hr/>	
Total	\$2247

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$$\frac{\text{taxes}}{2100} = \frac{7}{100}$$

$$100x = 14700$$

$$x = \$147$$

Sales Tax and Total Cost

Sales tax is an additional amount of money charged on items that people buy. The total cost of an item is the regular price plus the sales tax.

Example



1. Drew wants to buy exercise equipment that costs \$140 and the sales tax is 5.75%. What is the total cost of the equipment?

Method 1 Add sales tax to the regular price.

First, find the sales tax.

Let t represent the sales tax.

part = percent \times whole Write the percent equation.

$$t = 0.0575 \times 140 \quad 5.75\% = 0.0575$$

$$t = 8.05 \quad \text{Multiply.}$$

Next, add the sales tax to the regular price.

$$\$8.05 + \$140 = \$148.05$$



Method 2 Add the percent of tax to 100%.

$$100\% + 5.75\% = 105.75\% \quad \text{Add the percent of tax to 100\%.}$$

Let t represent the total.

part = percent \times whole Write the percent equation.

$$t = 1.0575 \times 140 \quad 105.75\% = 1.0575$$

$$t = \$148.05 \quad \text{Multiply.}$$

The total cost of the exercise equipment is \$148.05.

$$\frac{\text{taxes}}{\text{regular price}} = \frac{\%}{100}$$

$$\frac{x \text{ taxes}}{140} = \frac{5.75}{100}$$

$$\frac{805}{100} = 100x$$
$$x = \$8.05$$

$$140 + 8.05 = \$148.05$$

Method 3: Percent Proportion

Got it? Do this problem to find out.

- a. What is the total cost of a sweatshirt if the regular price is \$42 and the sales tax is $5\frac{1}{2}\%$?

$$\frac{x^{\text{taxes}}}{42} = \frac{5\frac{1}{2}}{100}$$

$$x = \$2.31 \text{ in taxes}$$

Total Cost

$$\$2.31 + \$42 = \$44.31$$

Tips and Markups

A **tip** or **gratuity** is a small amount of money in return for a service. The total price is the regular price of the service plus the tip.

A store sells items for more than it pays for those items. The amount of increase is called the **markup**. The **selling price** is the amount the customer pays for an item.



Examples

2. A customer wants to tip 15% on a restaurant bill that is \$35. What will be the total bill with tip?

Method 1 Add the tip to the regular price.

First, find the tip. Let t represent the tip.

part = percent \times whole

$$t = 0.15 \times 35 \quad 15\% = 0.15$$

$$t = 5.25 \quad \text{Multiply.}$$

Next, add the tip to the bill.

$$\$5.25 + \$35 = \$40.25 \quad \text{Add.}$$

Method 2 Add the percent of tip to 100%.

$$100\% + 15\% = 115\% \quad \text{Add the percent of tip to 100\%.}$$

The total cost is 115% of the bill. Let t represent the total.

part = percent \times whole

$$t = 1.15 \times 35 \quad 115\% = 1.15$$

$$t = 40.25 \quad \text{Multiply.}$$

Using either method, the total cost of the bill with tip is \$40.25.

$$\frac{\text{tip}}{\text{original price}} = \frac{15}{100}$$

$$\frac{x + \text{tip}}{35} = \frac{15}{100}$$

$$x = \$5.25$$

$$35 + 5.25 = \$40.25$$