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Lesson 28: Solving Percent Problems

**Student Outcomes**

* Given a part and the percent, students find the percent of a quantity and solve problems involving finding the whole.

Classwork

**Example (5 minutes)**

Read the questions from the example one by one.

Example

If an item is discounted , the sale price is what percent of the original price?

If the original price of the item is , what is the dollar amount of the discount?

discount

How much is the sale price?

sale price

* What are some different ways that we can solve this question?
  + *Answers will vary. Some students may draw diagrams that they can share with the class. Others may have found the value by finding equivalent fractions or by multiplying a quantity by the percent written as a fraction.*

Be sure to discuss different models that could be used.

Exercise (20 minutes)

Have students work in pairs or small groups to solve the problems. Students are given the sale price and the percent that was saved. They need to come up with the original price.

Students should be creating models in order to prove that their answers are correct.

Exercise

The following items were bought on sale. Complete the missing information in the table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Original Price | Sale Price | Amount of Discount | Percent Saved | Percent Paid |
| Television |  |  |  |  |  |
| Sneakers |  |  |  |  |  |
| Video Games |  |  |  |  |  |
| MP3 Player |  |  |  |  |  |
| Book |  |  |  |  |  |
| Snack Bar |  |  |  |  |  |

Closing (10 minutes)

* Have students showcase some of the models used to solve the problems. One possible way to showcase the work, if time allows, would be to hang up the work on the walls and have students do a gallery walk to view the diagrams. Ask students how they could check their work.
  + *The answers may vary according to which values are given and which values are missing. Students may mention that the discount and the sale price should add to be the original amount. The percents should add to . They could solve the problem using the answer to see if they can work back to a given amount.*

Lesson Summary

Percent problems include the part, whole, and percent. When one of these values is missing, we can use tables, diagrams, and models to solve for the missing number.

Exit Ticket (10 minutes)

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lesson 28: Solving Percent Problems

Exit Ticket

1. Write one problem using a dollar amount of and a percent of . Provide the solution to your problem.
2. The sale price of an item is after a discount. What was the original price of the item?

Exit Ticket Sample Solutions

1. Write one problem using a dollar amount of and a percent of . Provide the solution to your problem.

Answers will vary.

Problems that include as the sale price should include as the original. Because is saved, is paid of the original. Therefore, the original price is .

Problems that include as the original price and a of discount should include as a sale price. Below is an example of a tape diagram that could be included in the solution.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |

1. The sale price of an item is after a off discount. What was the original price of the item?

Because the discount was , the purchase price was of the original.

The original price was

Problem Set Sample Solutions

1. The Sparkling House Cleaning Company has cleaned houses this week. If this number represents of the total number of houses the company is contracted to clean, how many total houses will the company clean by the end of the week?

houses

1. Joshua delivered hives to the local fruit farm. If the farmer has paid to use of the total number of Joshua’s hives, how many hives does Joshua have in all?

hives