STRAND: Computation and Estimation

STRAND CONCEPT: Practical Applications-Rational Number and Proportional Reasoning

SOL 8.4

Remediation Plan Summary

Students apply proportions to solve problems that involve percents. Students practice solving practical problems involving fractions, decimals, and percents; and converting fractions to decimals.

Common Misconceptions

- Students may mix up the whole and the part when trying to write the proportion for the word problem.
- Students will incorrectly set up the proportions by always putting the variable as the numerator in the second ratio or over 100.
- Students may write the discount amount as the sale price instead of subtracting it from the original amount.
- Students may find the tax/tip and not the total cost instead of adding that to the original amount.

Materials

- 10x10 grids
- Percents to Decimals Warm-up
- A Problem Involving a Discount activity sheet
- More Problems Involving Discounts handout
- Exit Ticket: Labor Day Sale

Introductory Activity

- Distribute 10x10 grids to the students. Ask them to model 25% on one of the grids. Have students explain how they know their drawing represents 25%. Students may not shade the same 25 squares so show the different representation and discuss how they are similar/different but all represent the same amount. Display one of the models and ask, *What decimal amount does this represent?*
- Distribute copies of the "Percents to Decimals Warm-up" worksheet. Ask students to model the percents and then convert the percents to decimals. Discuss the answers with the students and ask them to explain their strategy for solving the problems.

Plan for Instruction

1. Display this problem:

   A store is selling flat-screen TVs for one-third of the original price. How much money is the discount on a $600 flat-screen TV?

   Discuss with students how best to approach a word problem such as this one.

2. Pass out the "A Problem Involving a Discount" activity sheet. Work though the steps in the problem with the students, emphasizing the importance of the steps that are being taken, not just the solution to this particular problem. Informally assess the students to find out whether they need additional help with this task.

3. Distribute copies of the "More Problems Involving Discounts" worksheet, and, based on your informal assessment, allow students to solve the problems in pairs or individually. Provide assistance as needed. After students have had time to complete the worksheet, go over the answers as a class.
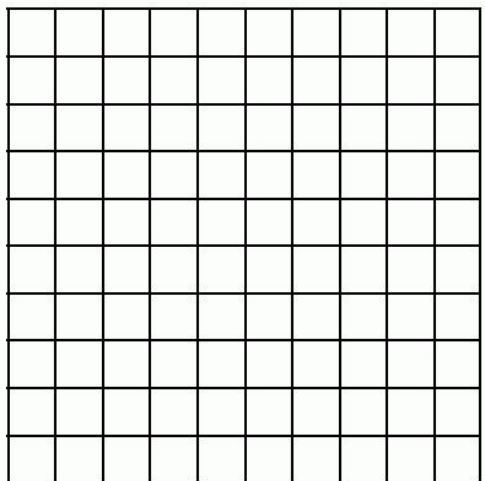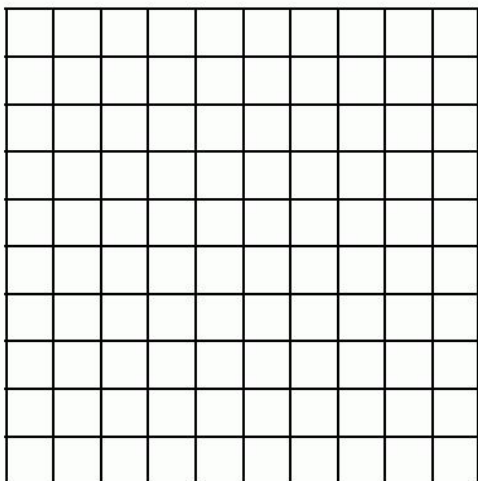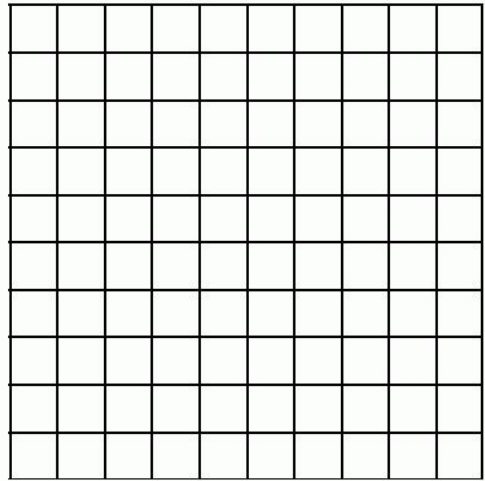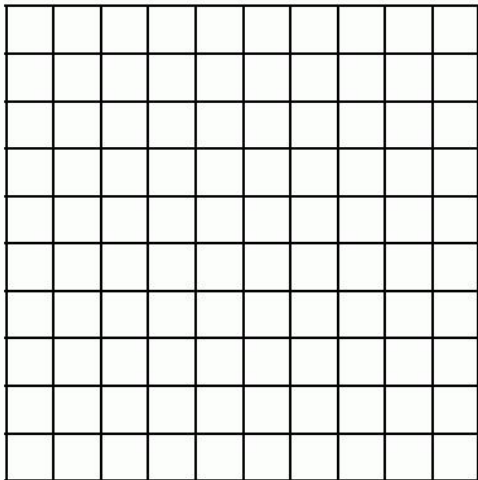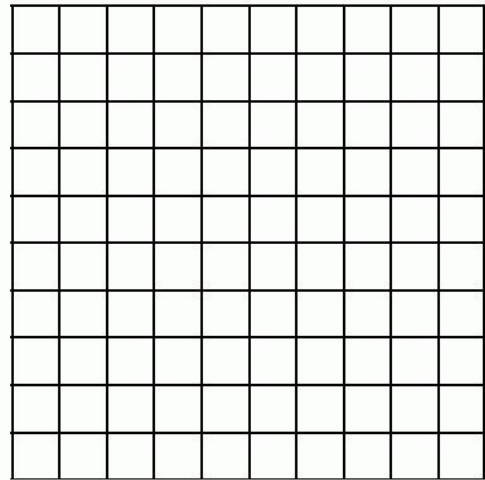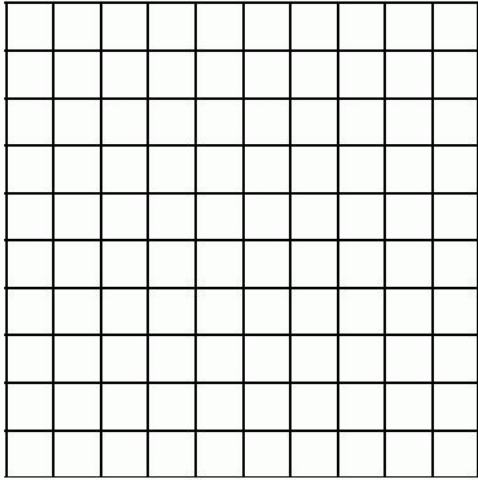
Pulling It All Together

Exit Ticket: Have students complete the Labor Day Sale exit ticket.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

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10x10 Grids

Name: _____

Percents to Decimals Warm-up

Write these percents as decimals.

1.   20%   _____

2.   35%   _____

3.   97%   _____

4.   50%   _____

5.   75%   _____

Name: _____

A Problem Involving a Discount

A store is selling flat-screen TVs for one-third of the original price. How much money is the discount on a $600 flat-screen TV?

1. Explain how you would find the sale price.

   _____

   _____

2. Explain how you would find the amount of the discount.

   _____

   _____

3. Show how you would solve this problem, and write the answer in the space provided.

   _____

   _____

   The discount is $ _____.

Name: _____

More Problems Involving Discounts

Show the steps for solving each of the following problems, and write the answer in the space provided.

1. During a sale, a skateboard is reduced by 50%. If the original price was $70, what is the discounted price?

    The discount price is $ _____

2. Ford Trucks is having a GIANT sale! All trucks are 20% off. The original price of a truck is $14,000. What is the discount?

    The discount price is $ _____

3. Aunt Karin always gives Jessica $10 for her birthday. Next year, she plans to give Jessica 20% more than she usually gives. How much will Jessica get for her birthday next year?

    Jessica will get $_____for her birthday next year.

4. A pair of shoes costs $109 at Sneaker City. At the Labor Day sale, they are 20% off. What is the sale price of the shoes?

    The sale price of the shoes is $_____

Exit Ticket: Labor Day Sale

During the Labor Day sale, appliances are discounted up to 35%. Different appliances have different discounts. Find the total price based upon the information provided.

Appliance	Price	Discount Amount	Sales Price
Refrigerator	$1999	25%	
Stove	$549	20%	
Dishwasher	$499	35%	
Microwave	$379	30%	
		Total Price	