

**Objectives:**

- Students will divide positive integers from the multiplication table without remainders, as evidenced by them passing one-minute quizzes.
- Students will solve percent equations, as evidenced by them completing a warm-up worksheet where they do so.
- Students will solve percent problems using percent equations, as evidenced by them completing a homework assignment where they do so.

**Materials:**

- Unit calendar transparency
- Minute Quiz 5-8
- Warm-up 5-8
- Notes #5-8 and Homework #5-8 (front and back)
- Notes #5-8 Teacher's Edition

**Do Now:**

- Park stuff
- Work on warm-up
- Get ready for minute quiz

**Homework:**

- Homework #5-8
- 9 hours of ALEKS due Friday

Time	Activity
Before Bell	<p style="text-align: center;"><b>AGENDA, DO NOW, AND WARM-UPS</b></p> <p>Write the <b>agenda</b> and the <b>do now</b> on the board. As students enter the classroom, shake their hands and direct them to follow the directions listed for the “do now.”</p>
10 min	<p style="text-align: center;"><b>MINUTE QUIZ, WARM-UP, ATTENDANCE, AND HOMEWORK COLLECTION</b></p> <p><b>Minute Quiz and Warm-up</b> When the bell rings, quickly go around and put the <b>minute quiz</b> on each student's desk, face down. Then, start everyone on the quiz at the same time and give everyone one minute. Students should work on the warm-up when they're done with the minute quiz. After the minute is over, have a student collect the minute quizzes and give them to the teacher's aide (TA) to grade.</p> <p><b>Attendance and Collect Homework</b> While students work on the warm-up, take <b>attendance</b> and have the TA collect <b>homework</b> &amp; stamp homework checkers.</p>
5 min	<p style="text-align: center;"><b>ANNOUNCEMENTS</b></p> <p>Explain to students that you have a couple announcements to make.</p> <p><b>ALEKS</b> Ask students, <i>The first announcement has to do with ALEKS. This week, how many hours of ALEKS are due Today?</i> Point to the homework assignment that indicates the answer. [Nine.]</p> <p><b>Unit Overview</b> <i>The second announcement is to describe what we're doing today. Put the unit calendar transparency on the overhead. Last time we met, we learned how to solve percent problems using proportions. Today, we will learn how to solve percent problems using another method called percent equations.</i></p>
25 min	<p style="text-align: center;"><b>LESSON</b></p> <p>Go through “Notes 5-8.” Afterwards, have the TA go around and stamp warm-up &amp; notes checkers.</p>
35 min	<p style="text-align: center;"><b>CLASSWORK &amp; ALEKS</b></p> <p><b>Classwork</b> Students must complete problems 1 and 4 on their homework assignment before working on ALEKS. This is to ensure that students will be able to do the rest of the problems before they leave class.</p>

Lesson 5-8 – Percent of Change; Discount

	<p><b>ALEKS</b> When students finish their classwork, they should work with <b>ALEKS</b>. Use this student work time to <b>return graded homework</b>.</p>
5 min	<p><b>CLEAN UP</b></p> <p>Students must check the laptops with the teacher or the TA before putting them away. After putting the laptops away, students should pack up, sit in their seats, and wait to be dismissed by the teacher (not by the bell). Make sure students push in their chairs as they leave.</p>

**Solve the following division problems. You have exactly one minute!**

$72 \div 12 =$

$30 \div 5 =$

$60 \div 5 =$

$40 \div 5 =$

$36 \div 9 =$

$36 \div 12 =$

$28 \div 7 =$

$24 \div 2 =$

$12 \div 6 =$

$40 \div 5 =$

$54 \div 9 =$

$10 \div 2 =$

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**Solve the following division problems. You have exactly one minute!**

$27 \div 9 =$

$84 \div 7 =$

$4 \div 4 =$

$18 \div 9 =$

$45 \div 5 =$

$10 \div 1 =$

$90 \div 9 =$

$99 \div 11 =$

$24 \div 3 =$

$27 \div 3 =$

$132 \div 11 =$

$15 \div 5 =$

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**Solve the following division problems. You have exactly one minute!**

$1 \div 1 =$

$4 \div 1 =$

$44 \div 11 =$

$44 \div 4 =$

$15 \div 5 =$

$120 \div 10 =$

$132 \div 11 =$

$84 \div 12 =$

$30 \div 5 =$

$14 \div 2 =$

$4 \div 4 =$

$18 \div 6 =$

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Numeracy  
Warm-up 5-8

Name:  
Date:

Period:

---

1) Evaluate  $2.33 - 2.22$ .

2) Evaluate  $1.73 - 4.57$

3) Write 20% as a fraction.

4) Solve  $x = \frac{20}{100} \cdot 85$

5) Write 30% as a fraction.

6) What is 30% of 210?

Numeracy  
Warm-up 5-8

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6) What is 30% of 210?

**Percent of Change**

Percent of change is the percent that something changes from its original amount.

$$\text{percent of change} = \frac{\text{amount of change}}{\text{original amount}}$$

Ex: Last month, average gas prices in San Jose rose from \$2.22 to \$2.33 ([www.sanjosegasprices.com](http://www.sanjosegasprices.com)).  
What is the percent of increase?

$$\begin{aligned} \text{percent of change} &= \frac{\text{amount of change}}{\text{original amount}} \\ &= \frac{2.33 - 2.22}{2.22} \\ &= \frac{0.11}{2.22} \\ &= .0495 \\ &= \boxed{4.95\%} \end{aligned}$$

Ex: Last year from June to December, average gas prices in San Jose fell from \$4.57 to \$1.73 ([www.sanjosegasprices.com](http://www.sanjosegasprices.com)).  
What is the percent of decrease?

$$\begin{aligned} \text{percent of change} &= \frac{\text{amount of change}}{\text{original amount}} \\ &= \frac{1.73 - 4.57}{4.57} \\ &= \frac{-2.84}{4.57} \\ &= -0.6214 \\ &= \boxed{-62.14\%} \end{aligned}$$

**Discount**

- Discount is the amount of money you save when something goes on sale.
- Percent of discount is the percentage that you save when something goes on sale.

Ex: Shoes that normally sell for \$85 are on sale for 20% off.

a) What is the discount?

What is 20% of \$85?

$$\begin{aligned} x &= 20/100 \cdot 85 \\ x &= 1700 / 100 \\ x &= 17 \text{ dollars} \end{aligned}$$

b) What is the sale price?

$$85 - 17 = 68 \text{ dollars}$$

Ex: An iPod that normally sells for \$210 is on sale for 30% off.

a) What is the discount?

What is 30% of \$210?

$$\begin{aligned} x &= 30/100 \cdot 210 \\ x &= 6300 / 100 \\ x &= 63 \text{ dollars} \end{aligned}$$

b) What is the sale price?

$$210 - 63 = 147 \text{ dollars}$$

**Percent of Change**

Percent of change is \_\_\_\_\_.

percent of change = \_\_\_\_\_

Ex:

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**Discount**

- Discount is \_\_\_\_\_.
- Percent of discount \_\_\_\_\_.

Ex:

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a) What is the discount?

a) What is the discount?

b) What is the sale price?

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1. What is the percent of increase from 30 to 39?
2. What is the percent of decrease from 60 to 48?
3. In the year 1990, California had a population of 29,786,000 people. In 2000, the population was 33,872,000. What is the percent of increase? (You may want to use a calculator).
4. Boots that normally sell for \$125 are on sale for 15% off.
  - a) What is the discount?
  - b) What is the sale price?
5. Laptops that normally sell for \$1,025 are currently on sale for 20% off.
  - a) What is the discount?
  - b) What is the sale price?