Math 7 - Unit 4

Day 4 - Percent of Change

Lesson Objectives:

- I can use proportional relationships to find the percent of change an amount increases or decreases.
- I can evaluate percent expressions in a variety of ways.

A **percent of change** is a ratio that compares the change in quantity to the original amount.

$$\frac{amount\ of\ change}{original\ amount}$$

Don't forget to write the quotient as a PERCENT!

When an amount increases, the percent of change is a **percent of increase**. When the amount decreases, the percent of change is a **percent of decrease**.

Another way to look at the above ratio is...

$$\frac{new\ amount - original\ amount}{original\ amount}$$

1. Find the percent of change from 325 to 390.

$\frac{390-325}{325} = \frac{65}{325} = 0.2 = 20\%$

2. In 1965, when John entered college, the tuition per year was $7500. In 2000, when his daughter went to the same school, the tuition was $25,500. Find the percent of change.

$\frac{25500-7500}{7500} = \frac{18000}{7500} = 2.4 = 240\%$

3. A $110 sweater is on sale for $88. What is the percent of change?

$\frac{88-110}{110} = \frac{-22}{110} = -0.2 = -20\%$

20% decrease

4. When Mrs. Call turned 16 and started to drive, gas was at a record low of $0.89 a gallon for regular unleaded. But when Mrs. Call was on vacation in California in 2008 she had to pay the exorbitant amount of $4.59 a gallon for the same regular unleaded. What was the percent of change?

$\frac{4.59-0.89}{0.89} = \frac{3.7}{0.89} = 4.157 = 415.7\%$

What is the percent of change from 2008 to today?

$\frac{2.92-4.59}{4.59} = \frac{-1.67}{4.59} = -0.363 = -36.3\%$

Sometimes rewriting an expression in a different form can shed light on the problem and how the quantities are related.

"...increased by 5%" w + 0.05w = "...multiplied by 1.05" 1.05w

Your email account contains 135 messages. You delete 60% of the messages. How many messages are left?

All messages − deleted messages

$m - 60\%\ m$

You have 200 songs on your mp3 player. You add 10% more songs. How many songs are on the mp3 player now?

$S + 10\%S$

$1S + .1S \rightarrow 1.1S$

$1.1(200)$

$200 + 20$

220 songs

220 songs

Homework

4.2 pg 168 #1-26, 34-38

* Individual Think Time *

What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...