

Math 7H - 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.

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

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...

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

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

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

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.

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

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

$$\frac{88 - 110}{110} = -20\% \text{ decrease}$$

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?

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

What is the percent of change from 2008 to today?

$$\frac{2.97 - 4.59}{4.59} = -35.2\%$$

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?

$$100\% - 60\% = 40\%$$

$$135 - .6(135)$$

$$135 - 81 = 54 \text{ messages}$$

$$100\% - 60\% = 40\%$$

$$.4(135)$$

$$54 \text{ messages}$$

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

$$100\% + 10\%$$

$$200 + .1(200)$$

$$200 + 20$$

$$220 \text{ songs}$$

$$100\% + 10\% = 110\%$$

$$1.1(200)$$

$$220 \text{ songs}$$

Homework

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* Individual Think Time *



What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- 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...

