Fractions, Percents, + Decimals

Mrs. Gross

Lessons 7-1 + 7-2 (p. 335)

A percent is a ratio that compares a number to 100.

% to fraction $60\% = \frac{60}{100} = \frac{6}{10} = \frac{2 \cdot 3}{2 \cdot 5} = \frac{3}{5}$

Reduce your fractions when possible.

$12.5\% = \frac{12.5}{100} = \frac{125}{1000} = \frac{5 \cdot 5 \cdot 5}{2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 5} = \frac{1}{8}$

$0.8\% = \frac{.8}{100} = \frac{8}{1000} = \frac{2 \cdot 2 \cdot 2}{2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 5} = \frac{1}{125}$

fraction to % $\frac{3}{4}$ ← $4 \times 25 = 100$

$\frac{3}{4} \overset{\times 25}{\underset{\times 25}{}} = \frac{75}{100} = 75\%$

$\frac{6}{5}$ ← Divide! $= 1.25 = 125\%$

↑ Here is the hundredths' place

$\frac{7}{11}$ ← Divide! =

$0.\overline{63}$ (*) You cannot have a repeat sign in front of the decimal!

↓

0.6363

Here is the hundredths place. ↑

↳ $= 63.\overline{63}\%$

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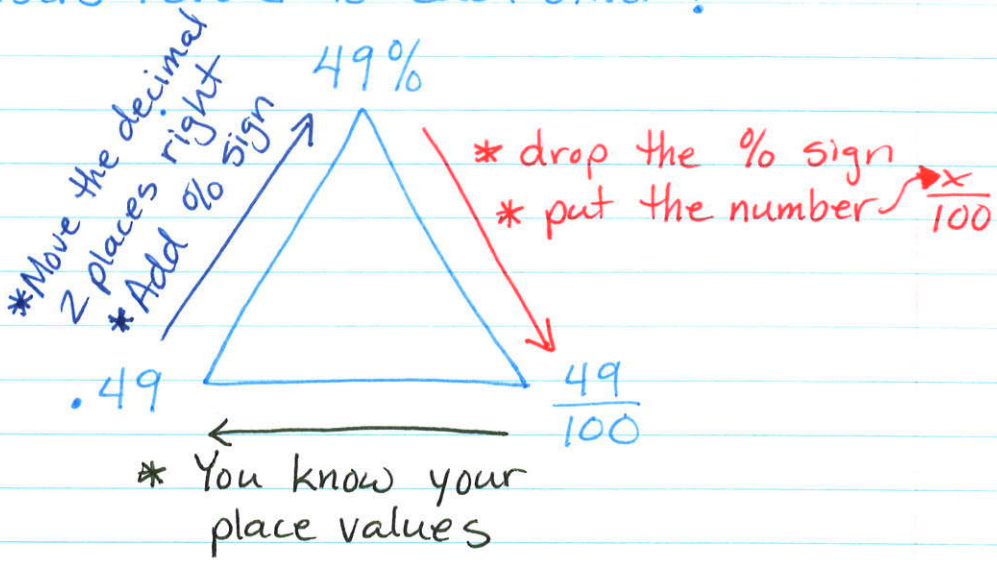
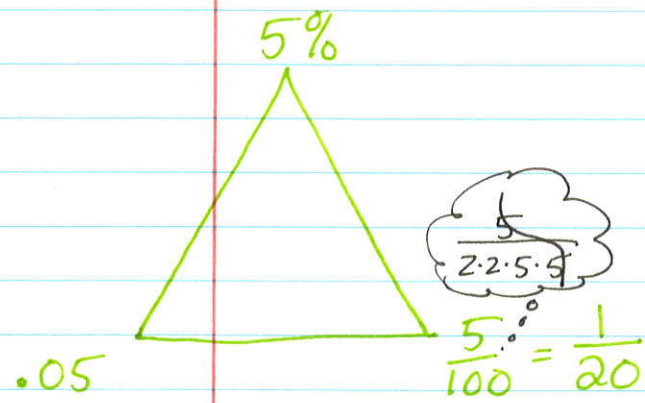
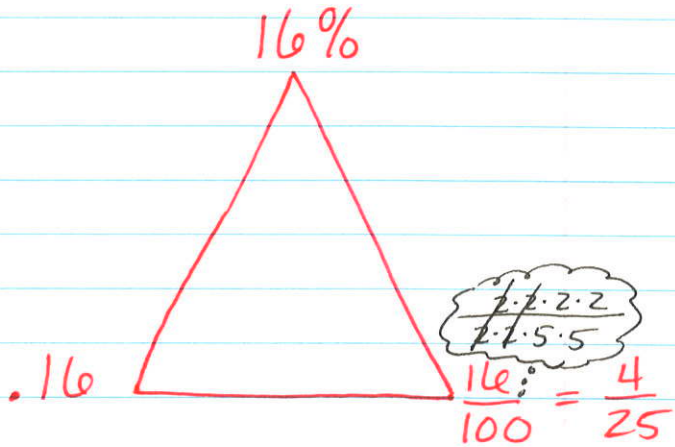
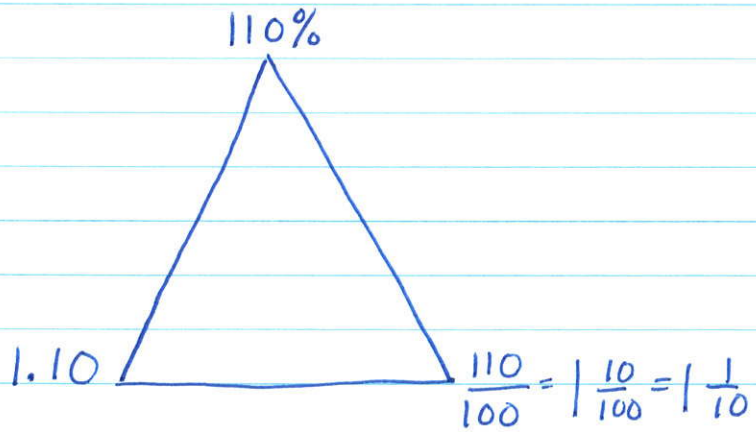
Look carefully to see how these numbers relate to each other!









Look to see how these relate going the other direction 

Percent Proportion

Mrs. Gross

p. 349 Lesson 7-3

12 is *what percent of 32?

$$\frac{\text{is}}{\text{of}} = \frac{p}{100} \quad \text{so...} \quad \frac{12}{32} = \frac{p}{100}$$

*Pay attention to when you need to write the percent sign.

$$32p = 1200$$
$$p = 37.5\%$$

What percent of 5 is 12?

$$\frac{\text{is}}{\text{of}} = \frac{p}{100} \quad \text{so...} \quad \frac{12}{5} = \frac{p}{100}$$

$$5p = 1200$$
$$p = 240\%$$

What *number is 15.5% of 450?

$$\frac{\text{is}}{\text{of}} = \frac{p}{100} \quad \text{so...} \quad \frac{x}{450} = \frac{15.5}{100}$$

$$100x = 6,975$$
$$x = 69.75$$

* This is the number. DON'T PUT A % SIGN ON IT!

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78 is 60% of what number?

$\frac{\text{is}}{\text{of}} = \frac{p}{100}$ $\quad\quad$ $\frac{78}{x} = \frac{60}{100}$

This is "the number" $60x = 7800$

Don't add the % sign $x = 130$

Find 65% of 440. ← What's missing? ... IS!

$\frac{x}{440} = \frac{65}{100}$

$100x = 28{,}600$

$x = 286$

4% of what number is 15?

$\frac{15}{x} = \frac{4}{100}$

$4x = 1500$

$x = 375$

Percent of Change

Mrs. Gross

Lesson 7-6 p. 368

... Comparing the change in quantity to the original amount

* You must specify: % increase
% decrease

1) What is the percent change when the temperature went from 60° F to 84° F?

$$\frac{\text{amount of change}}{\text{original amount}} \qquad \frac{+24}{60}$$

$84 - 60 = 24$

$$\frac{24}{60} = .40 = 40\% \text{ increase}$$

2) What is the percent change from 16 kg to 5 kg?

$$\frac{11}{16} = .6875 = 68.8\% \text{ decrease}$$

↑ rounded

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3) A suitcase is on sale at 40% off. The suitcase costs $79.99 regularly. How much will the sale price be?

* If the item is 40% off, you will need to pay 60%.

60% of $79.99 is ____?

$\frac{x}{79.99} = \frac{60}{100}$ $\quad 100x = 4,799.4$ $\quad x = \$47.99$

4) A robot has a 20% markup! The price tag says $720. How much does it now cost?

* You now have to pay 120%!!

120% of $720 is ____?

$\frac{x}{720} = \frac{120}{100}$ $\quad 100x = 86,400$ $\quad x = \$864$

Simple Interest

$I = prt$ ← time (in years)

- I = interest
- p = principal (what you put in the bank)
- r = interest rate (as a decimal)

$2,250 at 6% interest for 4 years

interest = $2,250 \times .06 \times 4 = \$540$

total new amount = $2,250 + 540 = \$2,790$