Lesson 7-1

1/4/12 Percents = Fractions (p.331-336)

Percent: part of a whole (100)

Change to a fraction: ... $\frac{\#}{100}$

ex: $35\% = \frac{35}{100} \div 5 = \boxed{\frac{7}{20}}$

ex: $620\% = \frac{620}{100} = \frac{62}{10} \div 2 = \frac{31}{5} = \boxed{6\frac{1}{5}}$

ex: $8.4\% = \frac{8.4}{100} \times 10 = \frac{84}{1{,}000} = \frac{42}{500} \div 2 = \boxed{\frac{21}{250}}$

ex: $.09\% = \frac{.09}{100} \times 100 = \boxed{\frac{9}{10{,}000}}$

ex: $\frac{1}{8}\% = \frac{\frac{1}{8}}{100}$ ... $\frac{1}{8} \div 100 \Rightarrow \frac{\frac{1}{8}}{\frac{100}{1}}$

Skip flip flip

$\frac{1}{8} \times \frac{1}{100} = \frac{1}{800}$

ex: $25\frac{1}{3}\% = \frac{25\frac{1}{3}}{100}$:

$25\frac{1}{3} \div 100 \Rightarrow \frac{\frac{76}{3}}{\frac{100}{1}}$

$\frac{\cancel{76}^{19}}{3} \times \frac{1}{\cancel{100}_{25}} = \frac{19}{75}$

Change to a percent:

× 100

ex: $\frac{7}{20} \overset{\times 5}{=} \frac{35}{100} = \boxed{35\%}$

ex: $6\frac{1}{5}$ → To Improper $\frac{31}{5} \overset{\times 20}{=} \frac{620}{100} = \boxed{620\%}$

ex: $\frac{21}{250} \overset{\times 4}{=} \frac{84}{1{,}000} \div 10 = \frac{8.4}{100} = \boxed{8.4\%}$

ex: $\frac{3}{8} \overset{\times 125}{=} \frac{375}{1{,}000} \div 10 = \frac{37.5}{100} = \boxed{37.5\%}$

$8\overline{)1000}$ = 125

ex: $\frac{1}{800} \div 8 = \frac{1/8}{100} = \frac{1}{8}\%$ OR $\frac{1}{800} \div 8 = .125 = \frac{.125}{100} = \boxed{.125\%}$

ex: $\frac{19}{\cancel{75}\,3} \cdot \frac{\cancel{100}^{\,4}}{1} = \frac{76}{3} = 25\frac{1}{3}\%$

FIVE STAR.

1/3/12 Review of Fractions=Decimals

In Notes: 10/11/11 | In Textbook: p121-127

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① Change the decimal to a fraction:

ex: $.82 \Rightarrow \frac{82}{100} = \boxed{\frac{41}{50}}$

↳ read aloud to hear the fraction

ex: $2.5000 \Rightarrow 2\frac{5}{10} = \boxed{2\frac{1}{2}}$

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② Change the fraction to a decimal:

Shortcut #1: You can hear the place value

10
100
1,000
10,000
⋮

ex: $10\frac{3}{1,000} \Rightarrow 10.003$

Shortcut #2: Change the denominator to a place value you **can** hear.

ex: $7\frac{24 \times 4}{25 \times 4} = 7\frac{96}{100} = 7.96$

Shortcut #3: The Chart of Champions #1

ex: $\frac{5}{8}$

When in doubt DIVIDE

$$
\begin{array}{r|l}
8 & 5.625 \\
 & -48\downarrow \\
\hline
 & 20 \\
 & -16 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
$$

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ex: $\frac{5}{6} = .8\overline{3}$

$$
\begin{array}{r|l}
6 & 5.833\ldots \\
 & -48 \\
\hline
 & 20 \\
 & -18 \\
\hline
 & 20 \\
 & -18 \\
\hline
 & 2
\end{array}
$$

Lesson 7-2

1/5/12 Percents = Decimals (p337-342)

Change to a decimal ... ÷100 ... Move dec. point 2 places LEFT

ex: 35% = .35

ex: 620% = 6.2

ex: 8.4% = .084

ex: $\frac{1}{8}$% = .00125

... .125%

ex: $25\frac{1}{3}$% = $.25\overline{3}$

... $25.\overline{3}$%

Change to a percent ... X 100

... Move dec point 2 places RIGHT

ex: .35 = 35%

ex: 6.2 = 620%

ex: .084 = 8.4%

ex: .00125 = .125% vs ex: $.25\overline{3}$ = $25.\overline{3}$% = $25\frac{1}{3}$%

a.k.a. "THE CHART"

1/6/12 Fractions=Decimals=Percents

Fractions	Decimals	Percents
$\frac{7}{8}$	.875	87.5%
$\frac{8}{10}$ $\frac{4}{5}$	.8	80%
$\frac{3}{4}$	.75	75%
$1\frac{1}{4}$	1.25	125%
$\frac{52}{100}$ $\frac{13}{25}$	.52	52%
$\frac{125}{100,000} = \frac{25}{20,000} =$ OR $\frac{1}{8} \div \frac{100}{1}$ $\frac{1}{800}$	.00125	$\frac{1}{8}\%$ ... .125%
$\frac{2}{9}$	$.2\overline{2}$ $\overline{2}$ $.\overline{2}$	$22\frac{2}{9}\%$ ... $22.\overline{2}\%$

Lesson 7-3

1/9/12 Percent Proportions (p345-350)

Percent: number out of 100 OR $\frac{\#}{100}$

Proportion: 2 equal ratios

Percent Proportion $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

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ex: What is 65% of 440?

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

$$\frac{n}{22} = \frac{13}{20}$$

$$1n = 22 \cdot 13$$

$$\boxed{n = 286}$$

Look at 12/13/11 notes, titled "Proportions" for explanation of steps. (FROM Lesson 6-5)

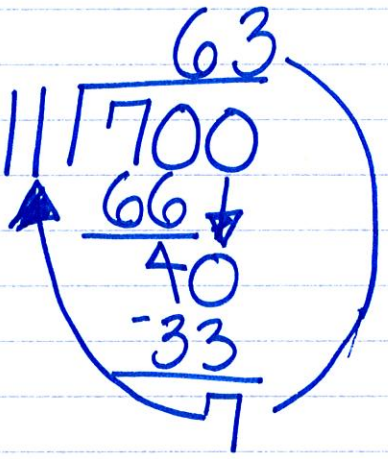
ex: 49 is 77% of what number?

$$\frac{7\cancel{49}}{\cancel{n}} = \frac{\cancel{77}11}{100}$$

$$11n = 7 \cdot 100$$

$$\frac{\cancel{11}n}{\cancel{11}} = \frac{700}{11}$$

$$n = 63\frac{7}{11}$$



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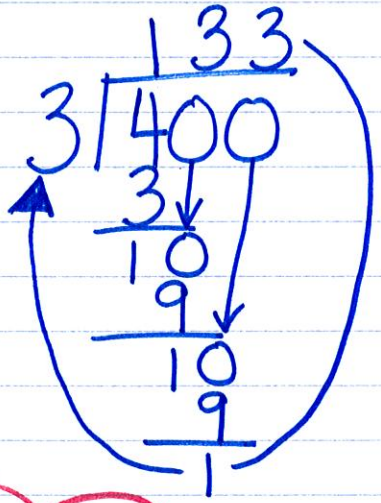
ex: What percent of 21 is 28?

$$\frac{4\cancel{28}}{3\cancel{21}} = \frac{n}{100}$$

$$3n = 4 \cdot 100$$

$$\frac{\cancel{3}n}{\cancel{3}} = \frac{400}{3}$$

$$n = 133\frac{1}{3}\%...$$



*When you are finding the percent, don't forget the percent sign

Lesson 7-5

1/12/12 Using Percent Equations (p357-362)

ex: What is 65% of 440?

$w = \frac{13}{20} \times \frac{440}{1}$ (22)

$w = 286$

Word	Symbol
"What"	a variable
"is"	=
"of"	×

① Change from words to symbols

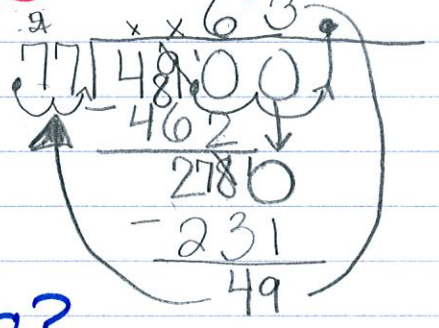
ex: 49 is 77% of what number?

$\frac{49}{.77} = \frac{.77 \times m}{.77}$

$63\frac{49}{77} = 63\frac{7}{11} = m$

② Use the fraction or decimal verson of the percent

③ Solve!



ex: What percent of 21 is 28?

$\frac{n \times 21}{21} = \frac{28}{21}$

21 | 28 (1), 21, 7

Don't forget to × 100 when finding the percent →

$n = 1\frac{1}{3} \times 100$

$n = 133\frac{1}{3}\%$

$\frac{4}{3} \times \frac{100}{1} = \frac{400}{3} = 133\frac{1}{3}$

Lesson 7-6

1/13/12 Percent of Change (p364-369)

Percent of Change: tells how much an amount has increased/decreased in relation to the original amount

ex: from 20 inches to 16 inches

$$\frac{-4}{20} = -.2 = \boxed{-20\%; \text{ decrease}}$$

Formula: $\frac{\text{amount of change}}{\text{original amount}}$ (−)

ex: from 8 people to 15 people

$$\frac{+7}{8} = .875 = \boxed{+87.5\%; \text{ increase}}$$

ex: from $32 to $3,040

$$\frac{3{,}008}{32} = 94. = \boxed{9{,}400\%; \text{ increase}}$$

1504 752 376 188 94

32 16 8 4 2 1

Markup: the amount of increase

ex: Find the selling price if a store pays $167 for a set of luggage and the markup is 38%.

$167 \times .38 = \$63.46$ ← ① Find the amount of markup. $ × % (as a decimal/fraction)

$63.46 + 167 = \$230.46$ ← ② **Add** the markup amount to the regular price.

Discount: the amount by which the regular priced is reduced (decreased)

ex: Find the sale price of a German Shepard puppy that is regularly $450, but is on sale for 35% off.

$450 \times .35 = \$157.50$ ← ① Find the amount of discount. $ × % (as a decimal/fraction)

$450 - 157.50 = \$292.50$ ← ② **Subtract** the discount amount from the regular price.

Lesson 7-8

1/18/12 Circle Graphs (p 376-381)

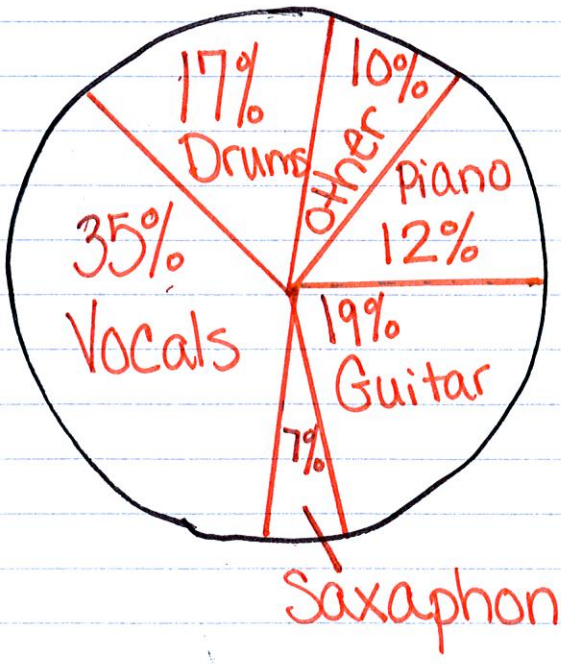
Circle Graph: visual representation of a set of data that is depicted in parts
↳ in the "%" form

ex: Construct a circle graph from the given information

What part would you like to be in a band?	
Guitar	19% ✓
Drums	17%
Piano	12% ✓
Saxaphone	7% ✓
Vocals	35%
other	10% ✓

"What part would you like to be in a band?"

① Title



② Draw circle

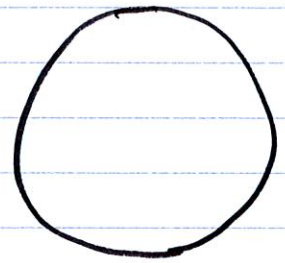
③ Divide the graph to represent the information

④ Labels

ex: Construct a circle graph from the given info.

Malan's College Credits		
Course	Credits	Percent
Math	4	$4/15 = .2\overline{6} = 26\frac{2}{3}\%$
English	4	$= 26\frac{2}{3}\%$
History	3	$3/15 = .2 = 20\%$
Biology	4	$= 26\frac{2}{3}\%$

= 15 total credits



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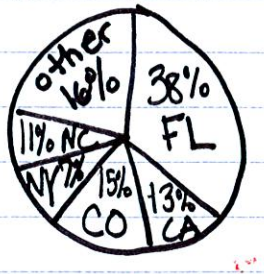
ex: A middle school survey asked students about favorite states to visit on vacation. 400 students were surveyed.

Favorite State to Visit



How many more students favor visiting Florida to Colorado?

FL: $400 \times .38 = 152$
CO: $400 \times .15 = 60$

FL - CO
152 - 60
92 students