Homework Review - 3.5, 3.6

(12) $\frac{n}{n-12} = \frac{9}{5}$

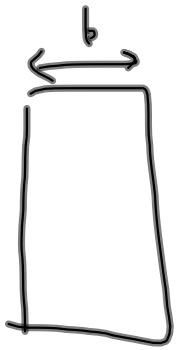
$9 \cdot (n-12) = 5n$

$9n - 108 = 5n$

$-9n \quad\quad -9n$

$\frac{-108}{-4} = \frac{-4n}{-4}$

$n = 27$



$$\frac{x}{b} = k$$

$$\frac{2\text{ in}}{90\text{ ft}} = \frac{4.75\text{ in}}{x}$$

$$\frac{2x}{2} = \frac{90(4.75)}{2}$$

$$x = 213.75\text{ ft}$$

3	135
4	180
5	225
6	270

Working with percentages:

A ratio that compares one number to 100

$\frac{P}{100}$

What is a percentage?

For comparisons - it's easy to see how ratios differ if they're compared to the same number

Why use percentages?

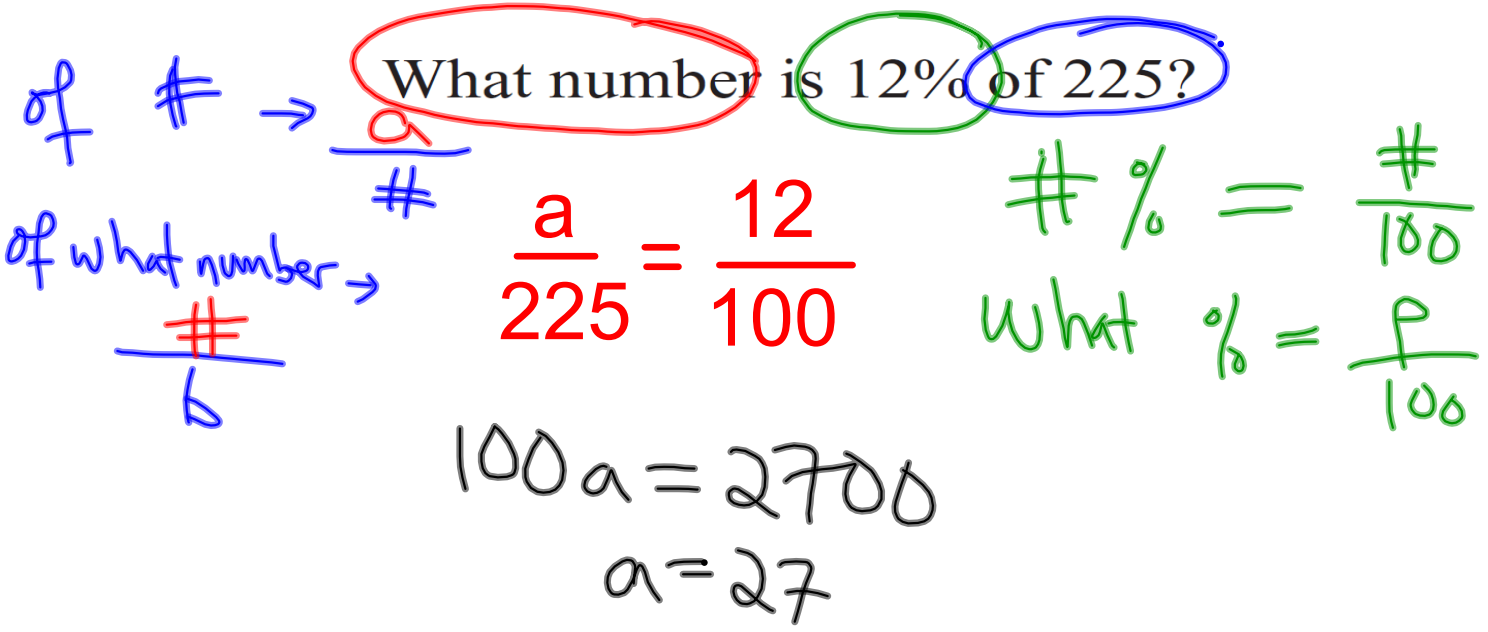
$\frac{a}{b} = \frac{p}{100}$

$\frac{7}{9} = \frac{P}{100}$

What do we solve for?

Solving Percentages Using Proportions:

Set up the equation in the form shown previously. Then solve for the unknown variable...



Solving Percentages Using Equations:

Use the "Percentage Equation": $\frac{a}{b} = \frac{p}{100}$

$a = p\% * b$

a p b

What number is 15% of 80?

$\frac{a}{80} = \frac{15}{100}$ $a = \frac{15}{100} \cdot 80$

1. What percent of 125 is 25? $\frac{a}{b}=\frac{P}{100}$

$$\frac{25}{125}=\frac{P}{100}$$

2. What percent of 70 is 14?

$$\frac{14}{70}=\frac{P}{100}$$

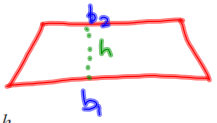
5. 3 is 2% of what number?

$$\frac{3}{b}=\frac{2}{100}$$

6. 384 is 64% of what number?

$$\frac{384}{b}=\frac{64}{100}$$

Solve Equations for Variables:



Area of a trapezoid: $A = \frac{h}{2}(b_1 + b_2)$. Solve for h.

Literal Equation - uses letters instead of numbers for constants

Use standard steps for solving equations -
1. eliminate parentheses using the distributive property
2. combine like terms
3. move variables to one side of the equation and constants to the other
4. divide by the coefficient of the variable term

$A = 12$
$b_1 = 4$
$b_2 = 3$

$12 = \frac{h}{2}(4+3)$

$\frac{2 \cdot 12}{7} = \frac{h}{2}(7) \cdot \frac{2}{7}$

$\frac{24}{7} = h$

$\frac{A}{(b_1+b_2)} = \frac{\frac{h}{2}(b_1+b_2)}{(b_1+b_2)}$

$2 \cdot \frac{A}{(b_1+b_2)} = \frac{h}{2} \cdot 2$

$\frac{2A}{(b_1+b_2)} = h$

$t \cdot a = \frac{(V_f - V_0)}{t} \cdot t$

$a \cdot t = V_f - V_0$
$-V_f \quad -V_f$

$-1(a \cdot t - V_f) = (-V_0) - 1$

$-a \cdot t + V_f = V_0$

$V_f - at = V_0$

Area of a trapezoid: $A = \frac{h}{2}(b_1 + b_2)$. Solve for b_2

$$\frac{A}{\frac{h}{2}} = \frac{\frac{h}{2}(b_1 + b_2)}{\frac{h}{2}}$$

$A \div \frac{h}{2}$

$A \cdot \frac{2}{h} = \frac{2A}{h}$

$$\frac{2A}{h} = b_1 + b_2$$

$-b_1 \quad -b_1$

$$\frac{2A}{h} - b_1 = b_2$$

Solve for x:

$$4 - 10y = 22 - 6x$$

Guitar Practice You practice playing your guitar every day. You spend 15 minutes practicing chords and the rest of the time practicing a new song. So the total number of minutes y you practice for the week is given by $y = 7(15 + x)$, where x is the number of minutes you spend on practicing a new song.

a. Solve the equation for x.

b. How many minutes did you spend on a new song if you practiced 210 minutes last week? 245 minutes? 315 minutes?

Homework:

p. 179, 4-28 even, 33, 35, 37

p. 187, 3-19 by 3, 27, 32, 33