

4.2 Percents as Proportions

Recall what percent literally means: per = out of
cent = 100

So 40% is equivalent to 40 out of 100 or $\frac{40}{100}$.

We've created a ratio.

There are really two ways to solve percent problems. One way uses proportions. The other using math sentences and Key words.

Version #1 Question: What percent of 80 is 15?

Proportion: $\frac{\text{part}}{\text{whole}} = \frac{\text{part}}{\text{whole}}$ so $\frac{\boxed{x}}{100} = \frac{15}{80}$

\uparrow percent \uparrow unknown percent

\leftarrow part \leftarrow whole

We can then cross multiply to get $\frac{80x}{80} = \frac{1500}{80}$

$$x = 18.75\%$$

Version #2: Math sentence w/ Key words; is (=)
what (x)
of (.)

So, what percent of 80 is 15?

$\underbrace{\hspace{2cm}}_x \quad \downarrow \quad \downarrow$
 $\cdot \quad 80 = 15$

$$80x = 15$$

$$x = .1875$$

or

$$18.75\%$$

\nwarrow change to %
by $\times 100$

Try a couple more:

b. Find 115% of 200.

c. 45 is 40% of what number?

CW: pg 176 # 28, 34, 35, ⁵⁰~~41~~, 54, 56, 74

HW: pg 176 (#23-41 odds X 49-61 odds) # ~~67~~, ~~73~~, 75