

Percents and Proportions

(6-6)

Finding Part of a Whole

0% 0

65% n ← part

100% 245 ← whole

$\frac{65}{100} = \frac{n}{245}$: Write a proportion _____

100 245

$65(245) = 100n$: Write cross products

$\frac{65(245)}{100} = \frac{100n}{100}$: Divide each side by 100

100 100

159.25 = n

65% of 245 is 159.25

Finding a percent

What percent of 60 is 52? Round to the nearest tenth of a percent.

$N = 52$: Write a proportion

$\frac{100}{60} = \frac{n}{60}$

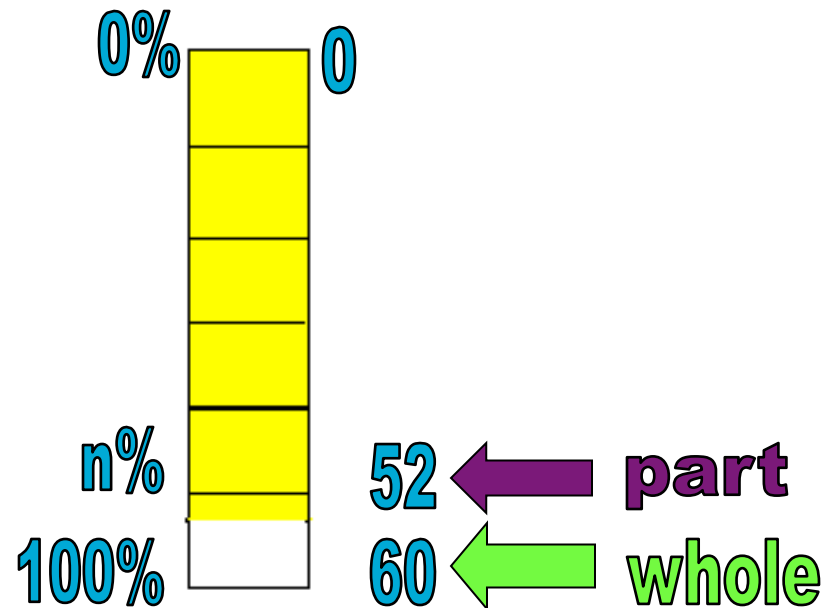
$60n = 100(52)$: Write cross products

$60n = 100(52)$: Divide each side by 60

$n = \frac{100(52)}{60}$

$n = 86.6$ repeating : Simplify

$n \approx 86.7$: Round



52 is approximately 86.7% of 60

Finding a Whole Amount

$\frac{46}{100} = \frac{207}{n}$: Write a proportion

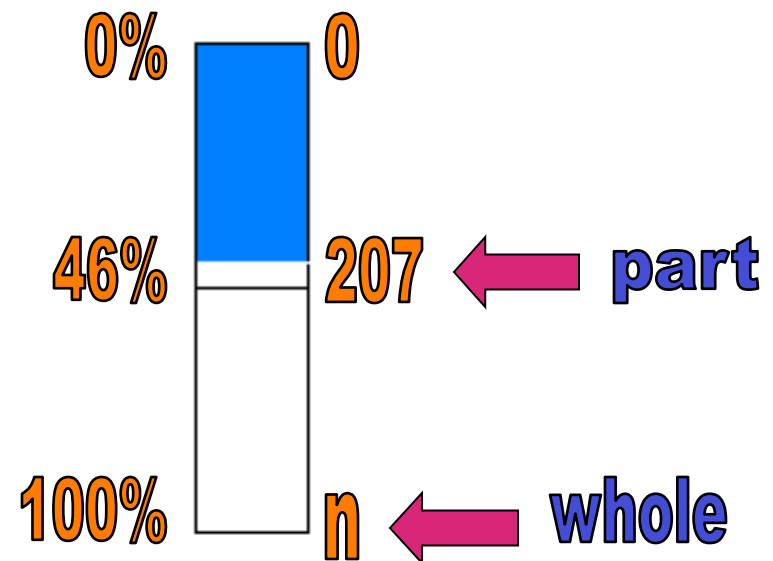
$46n = 100(207)$: Write cross products

$\frac{46n}{46} = \frac{100(207)}{46}$: Divide each side by 46

$n = 450$: Simplify

207 is 46% of 450

207 is 46% of what number?



Key concepts on percents and Proportions

Finding the percent

What percent of 40 is 6?

$$\frac{N}{100\%} = \frac{6}{40}$$

Finding the part

What number is 15% of 40?

$$15 = \frac{n}{100} \cdot 40$$

Finding the whole

6 is 15% of what number?

$$\frac{15}{100} = \frac{6}{n}$$

Many word problems can be solved using the formula
“is over of equals percent over 100.”

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

We can use this relationship to set up equations and solve for the variable.

BACK

The value of the is & of come from the problem

The number here is already a percent, just replace with the number

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

Only 2 of the 3 values of is, of, and % will be given, the missing amount is where you will put the variable.

The 100 stays the same in all problems

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

Sixty-eight is 20% of what number?

$$\frac{68}{x} = \frac{20}{100}$$

$$68(100) = x(20)$$

$$6800 = 20x$$

$$x = 340$$

What number is 15% of 60?

$$\frac{x}{60} = \frac{15}{100}$$

$$x(100) = 60(15)$$

$$100x = 900$$

$$x = 9$$

37 is what percent of 296?

$$\frac{37}{296} = \frac{x}{100}$$

$$37(100) = 296x$$

$$3700 = 296x$$

$$x = 12.5$$

Story Problem

Population In 1950, the population of Alaska was about 128,535. That was about 20.5% of the population of Alaska in the year 2000. About how many people lived in Alaska in the year 2000?

$20.5n = 100(128,535)$: Write cross products

$\frac{20.5n}{20.5} = \frac{100(128,535)}{20.5}$: Divide each side by 20.5

The answer you should get is: 627,000 people