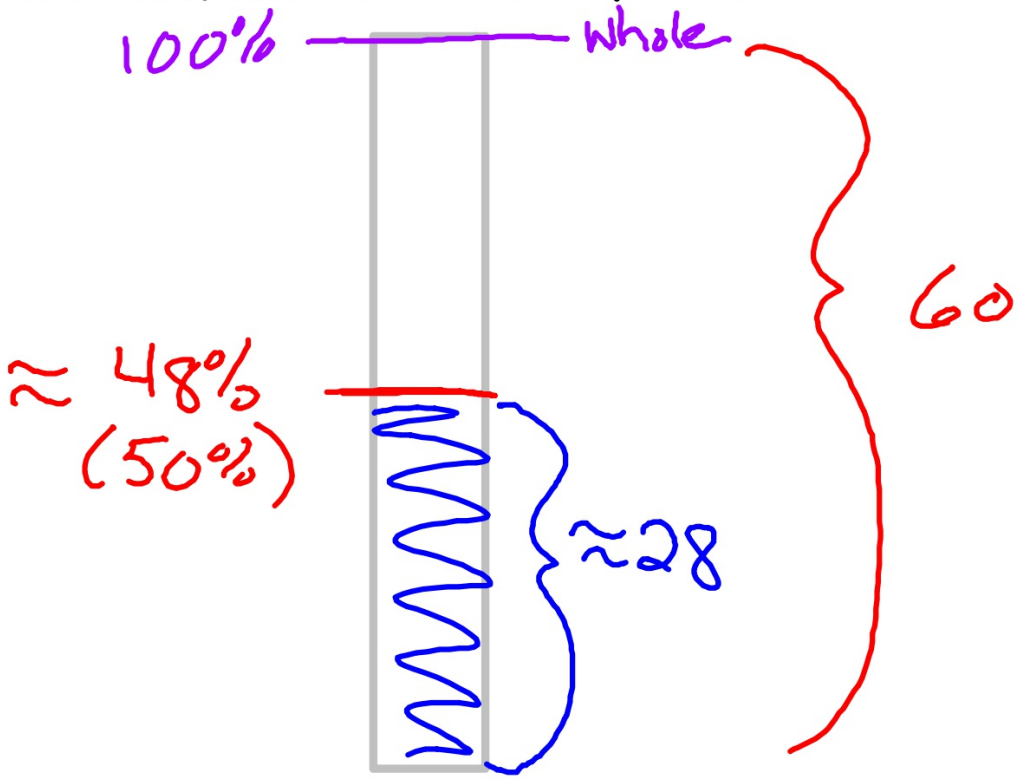
6.3 Solving a Percent Proportion

Learning Targets:

- Use Models to estimate answers
- Write a Percent Proportion
  - Solve for a Part
  - Solve for a Whole
  - Solve for a Percent

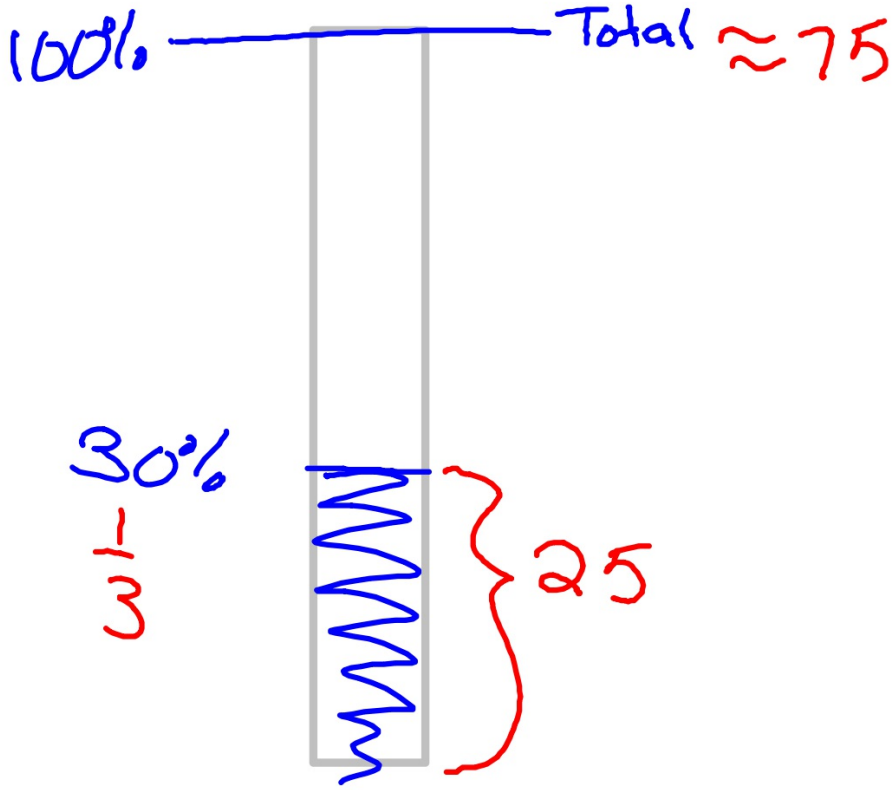
Use a model to estimate the answer.

What number is 48% of 60?



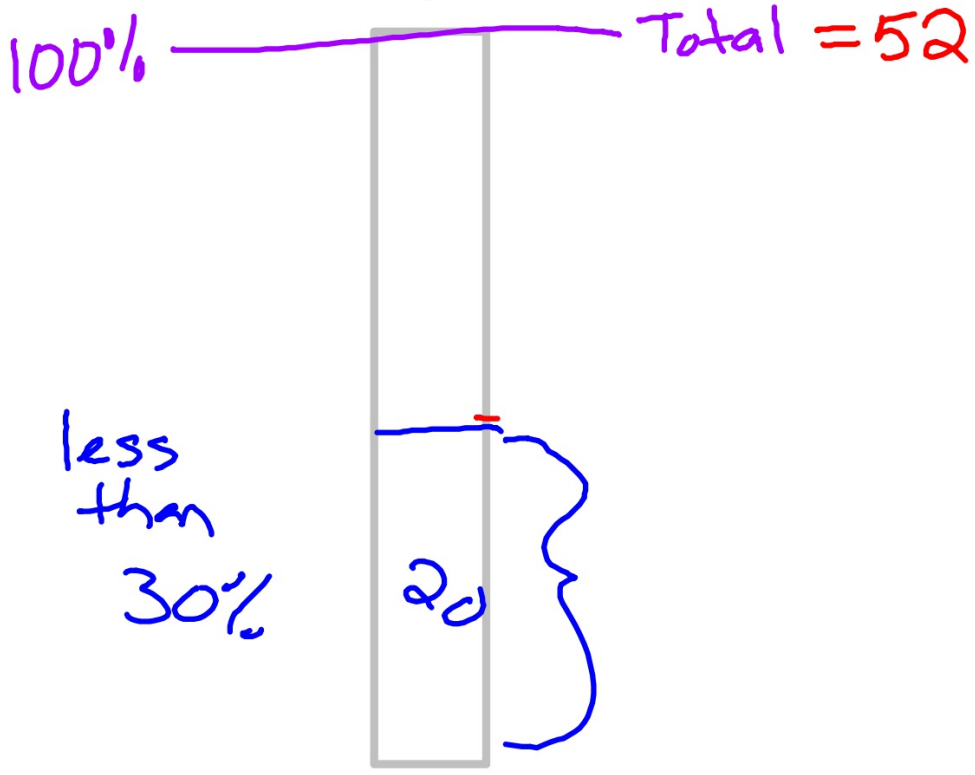
Use a model to estimate the answer.

25 is 30% of what number?

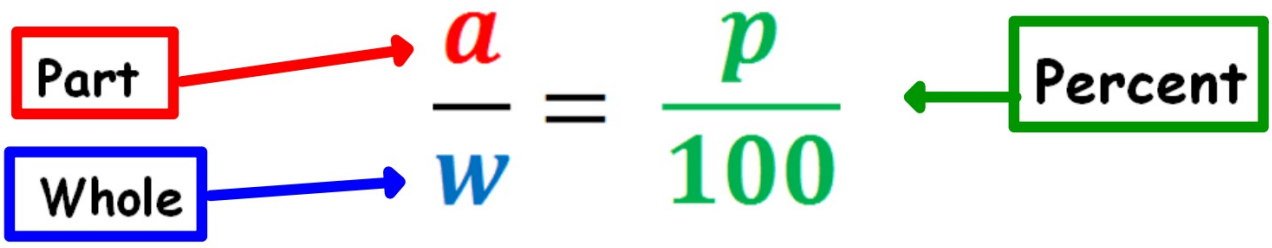


Use a model to estimate the answer.

20 is what percent of 52?



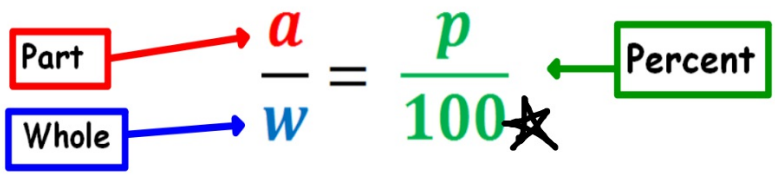
6.3 The Percent Proportion



(4 parts in a proportion)

The Percent Proportion

3 out of 4 is 75%



$$\frac{3}{4} = \frac{75}{100}$$

What are we Finding?

3 Types of Questions

- What percent of 24 is 18?
- What number is 68% of 142?
- 72% of what number is 54?

We will fill in the four parts of the proportion. One part will be an "unknown" and we have to solve the proportion to find it.

Hint: "What" = the variable

What p percent of 24 is 18?

What n number is 68% of 142?

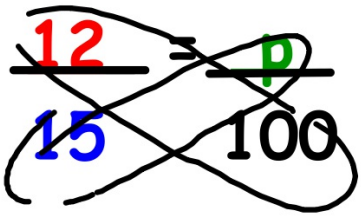
72% of what n number is 54?

Finding a Percent

Part over Whole = P over 100

What percent of 15 is 12?

Part → $\frac{a}{w}$ ← Whole $= \frac{p}{100}$ ← Percent



Method #1

$\frac{15p}{15} = \frac{1200}{15}$

$p = 80\%$

Is over Of = P over 100

$$\frac{\sqrt{is}}{\sqrt{of}} = \frac{p}{100}$$

Method #2 : This is what I use

Is over Of = P over 100

$$\frac{is}{of} = \frac{p}{100}$$

20% of what number is 32

n

$$\frac{32}{n} = \frac{20}{100}$$

$$\frac{20n}{20} = \frac{3200}{20}$$

$$n = 160$$

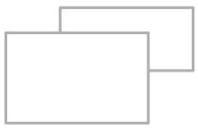
Finding a Percent

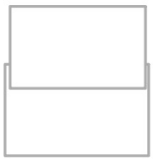
Is over Of = P over 100

What percent of 15 is 12?

$$\frac{is}{of} = \frac{p}{100}$$

$$\frac{12}{15} = \frac{p}{100}$$





Finding a Percent

Method #1

Part → $\frac{a}{w}$ ← Whole $= \frac{p}{100}$ ← Percent

Method #2

$\frac{is}{of} = \frac{p}{100}$

55 is what percent of 44

$$\frac{55}{44} = \frac{p}{100}$$

$$p = 125\%$$

Finding a Part

Method #1

Part → $\frac{a}{w} = \frac{p}{100}$ ← Percent

Whole → w

Method #2

$$\frac{is}{of} = \frac{p}{100}$$

What number is 36% of 50?

$$\frac{n}{50} = \frac{36}{100}$$

$$n = 18$$

Finding a Whole

Method #1

Part → $\frac{a}{w}$ ← Whole $= \frac{p}{100}$ ← Percent

Method #2

$\frac{is}{of} = \frac{p}{100}$

150% of what number is 24?

$$\frac{24}{n} = \frac{150}{100}$$

$$\frac{150n}{150} = \frac{2400}{150}$$

$$n = 16$$

On Your Own

Write and Solve a Proportion to Answer the Question.

1. What percent of 15 is 3?

$\frac{15}{of} = \frac{P}{109}$

$\frac{3}{5} = \frac{P}{100}$ 60%

2. 25 is what percent of 20?

$\frac{25}{20} = \frac{P}{100}$ 125%

3. What number is 80% of 60?

$\frac{n}{60} = \frac{80}{100}$ 48

4. 10% of 40.5 is what number?

$\frac{n}{40.5} = \frac{10}{100}$ 4.05

5. 0.1% of what number is 4?

$\frac{4}{n} = \frac{0.1}{100}$ 4000

6. $\frac{1}{2}$ is 25% of what number?

$\frac{\frac{1}{2}}{n} = \frac{25}{100}$ $n = 2$

On Your Own

Write and Solve a Proportion to Answer the Question.

1. What percent of 5 is 3?

2. 25 is what percent of 20?

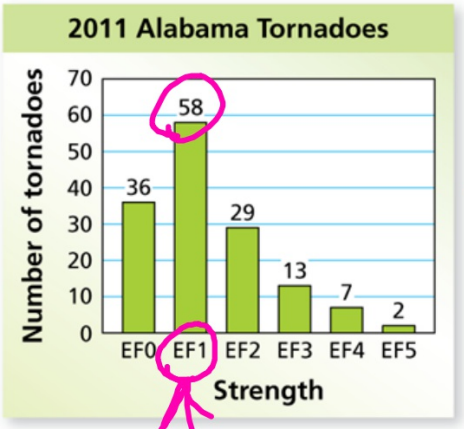
3. What number is 80% of 60?

4. 10% of 40.5 is what number?

5. 0.1% of what number is 4?

6. $\frac{1}{2}$ is 25% of what number?

Application Problem: You will see this on your HW and test!



The bar graph shows the strengths of tornadoes that occurred in Alabama in 2011. What percent of the tornadoes were EF1s?

Total = 36+58+29+13+7+2

= 145

PART

$\frac{58}{145} = \frac{P}{100}$

40%

Homework

Page 230 #4,
11-21 odd 22-28
even

To complete #28,
Look at example #4 in
your textbook