6.5 Solving Percent Problems

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Sloths may seem lazy, but their extremely slow movement helps to make them almost invisible to predators. Sloths sleep an average of 16.5 hours a day. To find out what percent of a 24-hour day 16.5 hours is, you can use a proportion or an equation.

Proportion Method

Part
$$\rightarrow \frac{n}{100} = \frac{16.5}{24} \leftarrow \text{Part}$$
Whole $\rightarrow 100 = \frac{16.5}{24} \leftarrow \text{Whole}$

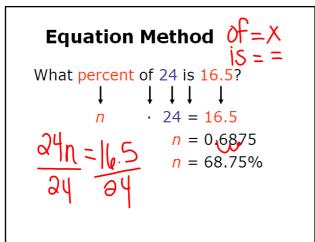
$$\frac{n \cdot 24}{24} = 100 \cdot 16.5$$

$$24n = 1,650$$

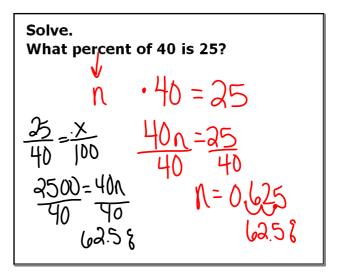
$$\frac{n}{24} = 16.5$$

Sloths spend about 69% of the day sleeping!

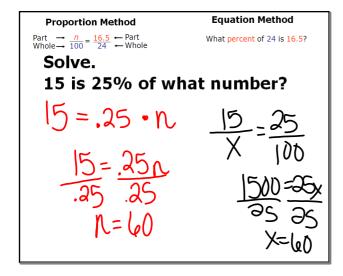
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Solve.
What percent of 50 is 10? 50 = 10 50 = 10 1 = 0.20 1 = 0.20 1 = 0.20

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Solve.

8 is 40% of what number?

$$8 = 0.4 \cdot n$$

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Solve.

35 is 28% of what number?

$$\frac{35}{28} = \frac{.28}{28}$$
 N=125

Solve.

36 is 24% of what number?

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Solve.

What percent of 9 is 18?

$$n \cdot 9 = 18$$

Solve.

$$\frac{9n = 18}{9}$$
 $n = 200$

What percent of 6 is 36?

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A portable DVD player costs \$225 before tax at an appliance warehouse. What is the sales tax rate if the tax is \$18?

Restate the question: What percent of \$225 is \$18?

$$n \cdot 225 = 18$$
 $225 n = 18$
 $225 n = 18$

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A new flat screen TV costs \$800 before tax at an appliance warehouse. What is the sales tax rate if the tax is \$56?

Restate the question: What percent of \$800 is \$56?

Lesson Quiz

Solve.

- 1. 21 is 42% of what number?
- 2. What percent of 292 is 73? 25
- 3. 112% of what number is 84? 75
- 4. What percent of 1,340 is 13.4?
- 5. An ad features a bicycle on sale for \$139. If the total cost of the bike is \$147.34, what is the sales tax rate?

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