

Lesson 6-1

Example 1

What number is 40% of 130?

Solution

Let x = the part. The whole is 130. Write and solve a proportion.

$$\frac{\text{part}}{\text{whole}} \rightarrow \frac{40}{100} = \frac{x}{130} \leftarrow \frac{\text{part}}{\text{whole}}$$

$$40 \cdot 130 = 100 \cdot x \quad \text{Use the cross products.}$$

$$5200 = 100x$$

$$\frac{5200}{100} = \frac{100x}{100}$$

$$52 = x$$

Example 2

What percent of 72 is 54?

Solution

Let y = the percent. Since you are to find the percent, y is over 100.

$$\frac{y}{100} = \frac{54}{72} \leftarrow \frac{\text{part}}{\text{whole}}$$

$$y \cdot 72 = 100 \cdot 54 \quad \text{Use the cross products.}$$

$$72y = 5400$$

$$\frac{72y}{72} = \frac{5400}{72}$$

$$y = 75$$

54 is 75% of 72.

Example 3

18 is $32\frac{1}{2}\%$ of what number?

Solution

Let n = the number.

$$\frac{32.5}{100} = \frac{18}{n} \qquad 32\frac{1}{2}\% = 32.5\%$$

$$32.5n = 100 \cdot 18$$

$$32.5n = 1800$$

$$\frac{32.5n}{32.5} = \frac{1800}{32.5}$$

$$n \approx 55.4$$

18 is approximately $32\frac{1}{2}\%$ of 55.4.

Example 4

WAGES After working for 6 months as a restaurant cashier at \$6.50 an hour, Erin got an 8% raise. What was the increase in her hourly wage?

Solution

Let r = the increase in Erin's hourly wage. Write and solve a proportion.

$$\frac{8}{100} = \frac{r}{6.50}$$

$$8 \cdot 6.50 = 100 \cdot r$$

$$52 = 100r$$

$$\frac{52}{100} = \frac{100r}{100}$$

$$0.52 = r$$

Erin's hourly wage increased by \$0.52 or 52 cents.