

## 4-4 Percents

To solve a percent problem use the proportion:  $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

Use a proportion to answer each question.

Ex. 1: 18 is what percent of 20?

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$$\begin{aligned} \frac{18}{20} &= \frac{x}{100} \\ 18(100) &= 20(x) \\ \frac{1800}{20} &= \frac{20x}{20} \\ 90 &= x \\ \boxed{90\%} \end{aligned}$$

Figure out which numbers to put in the proportion.

Fill in the appropriate numbers into the proportion

Cross Multiply  
and solve for x.

Remember to put the percent symbol on the answer.

Ex 2: What is 24% of 25?

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$$\begin{aligned} \frac{x}{25} &= \frac{24}{100} \\ x(100) &= 24(25) \\ \frac{100x}{100} &= \frac{600}{100} \\ \boxed{x = 6} \end{aligned}$$

Fill in the appropriate numbers into the proportion

Cross Multiply  
and solve for x.

Ex. 3: 36% of what number is 168?

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$$\begin{aligned} \frac{168}{x} &= \frac{36}{100} \\ 168(100) &= 36(x) \\ \frac{16800}{36} &= \frac{36x}{36} \\ \boxed{466\frac{2}{3} = x} \end{aligned}$$

Fill in the appropriate numbers into the proportion

Cross Multiply  
and solve for x.

**Simple Interest Formula:**  $I = prt$  where  $I$  is the amount of interest,  $p$  is the principal (amount invested),  $r$  is the annual interest rate and  $t$  is the time (in years)

Use  $I = prt$  to find the missing quantity.

Ex. 4: Find  $p$  if  $I = \$1853$ ,  $t = 6$  years and  $r = 4\%$

Convert the rate from a percent to a decimal by shifting the decimal 2 places to the left.  $4\% = 0.04$

$$\begin{aligned} I &= prt \\ 1853 &= p(0.04)(6) \\ \frac{1853}{0.24} &= \frac{0.24p}{0.24} \end{aligned}$$

Substitute in the values given. Remember to use the decimal form or the rate.  
Simplify the right hand side and solve for p.

$$\begin{aligned} 7720.8333... &= p \\ \boxed{\$7720.83} \end{aligned}$$

Since the principal is money, round to the nearest cent and remember \$.