

Section Overview



Decimals, Fractions, and Percents

Lessons 6-1, 6-2

Why? Any rational number can be represented by a decimal, a fraction, or a percent.

A **percent** is a ratio that compares a number to 100.

To write a **fraction as a decimal**, divide the numerator by the denominator.

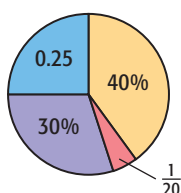
$$\frac{1}{8} = 1 \div 8 = 0.125$$

To write a **decimal as a percent**, multiply by 100 and insert the percent symbol, which means "divided by 100."

$$0.125 \cdot 100 = 12.5\%$$

Common percents and their equivalent fractions:

$$\begin{aligned} 10\% &= \frac{1}{10} \\ 12.5\% &= \frac{1}{8} \\ 16\frac{2}{3}\% &= \frac{1}{6} \\ 20\% &= \frac{1}{5} \\ 25\% &= \frac{1}{4} \\ 33\frac{1}{3}\% &= \frac{1}{3} \\ 50\% &= \frac{1}{2} \\ 66\frac{2}{3}\% &= \frac{2}{3} \\ 75\% &= \frac{3}{4} \end{aligned}$$



Fraction	Decimal	Percent
$\frac{25}{100} = \frac{1}{4}$	$\frac{1}{4} = 0.25$	25%
$\frac{40}{100} = \frac{2}{5}$	$\frac{2}{5} = 0.4$	40%
$\frac{5}{100} = \frac{1}{20}$	$\frac{1}{20} = 0.05$	5%
$\frac{30}{100} = \frac{3}{10}$	$\frac{3}{10} = 0.3$	30%

Methods of Estimating Percents

- Use compatible numbers.
- Round to common percents: e.g., 10%, 25%, 50%
- Break percents into smaller parts: e.g., 1%, 5%, 10%

Percent Problems

Lessons 6-3, 6-4

Why? Using percents is a way of comparing numbers.

Finding a Percent of a Number

What number is 25% of 32?

Set up an equation.

What number is 25% of 32?

$$n = 25\% \cdot 32$$

$$n = 0.25 \cdot 32$$

$$n = 8$$

So **8** is 25% of 32.

Set up a proportion.

25 is to 100 as **what number** is to 32?

$$\frac{25}{100} = \frac{n}{32}$$

$$100n = 25 \cdot 32$$

$$100n = 800$$

$$n = 8$$

Finding the Percent One Number Is of Another

What percent of 120 is 90?

Set up an equation.

What percent of 120 is 90?

$$p \cdot 120 = 90$$

$$p = \frac{90}{120}$$

$$p = 0.75$$

So 90 is **75%** of 120.

Set up a proportion.

What number is to 100 as 90 is to 120?

$$\frac{n}{100} = \frac{90}{120}$$

$$120n = 100 \cdot 90$$

$$120n = 9000$$

$$n = 75$$

Finding a Number When the Percent Is Known

36 is 4% of what number?

Set up an equation.

36 is 4% of **what number**?

$$36 = 4\% \cdot n$$

$$36 = 0.04n$$

$$\frac{36}{0.04} = \frac{0.04n}{0.04}$$

$$900 = n$$

So 36 is 4% of **900**.

Set up a proportion.

4 is to 100 as 36 is to **what number**?

$$\frac{4}{100} = \frac{36}{n}$$

$$4n = 100 \cdot 36$$

$$4n = 3600$$

$$n = 900$$