Warm-up



What is a Percent?

Percent means "out of 100."

The symbol for percent is **%**.

2 → fraction

- Fraction = part of a whole
- Decimal = another way to show a part of a whole
- Percent = how many out of 100

Converting Decimals to Percents

Rule:

Multiply the decimal by 100 and add the % sign.

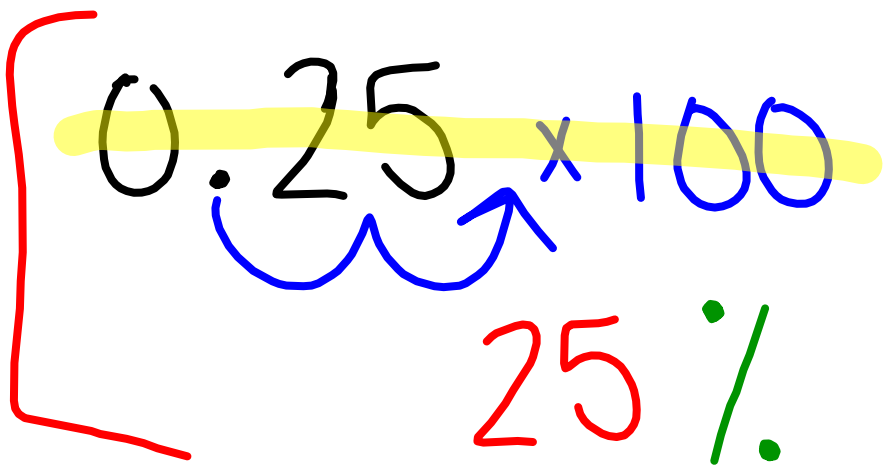
Move the decimal point **2 places to the right**.

4 x 100

400

Example 1

0.25



Example 2

0.6 × 100

60%

Example 3

0.875 × 100

87.5%

If I wanted to convert a FRACTION to a percent, what do you think we would have to do first???

$\frac{7}{20} \times \frac{5}{5} = \frac{35}{100} = 0.35$

0.35×100

35.0%

$\frac{10}{12}$

$12\overline{)10.000}$

$0.8\overline{3}$

-96

40

-36

40

0.83×100

83%

Converting Fractions to Percents

1. We have to first convert to a decimal
    - Using either: long division OR making the denominator 100.
2. Multiply the decimal by 100, then you have your percent.

Example 1

$\frac{3}{4} \overset{\times 25}{=} \frac{75}{100} = 0.75$

0.75×100

75%

Example 2

$\frac{5}{8}$

$$\begin{array}{r} 0.625 \\ 8\overline{)5.000} \\ -48\downarrow \\ \hline 20 \\ -16 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

0.625×100

62.5%

5. ~~Use Base Ten Blocks to show each percent.~~
Then write each percent as a fraction

a) 84% **b)** 17% **c)** 25% **d)** 100%

$0.5 = \frac{5}{10}$

$6\% = 0.06 \div 100$

$0.07 = \frac{7}{100}$ $\frac{6}{100}$

$0.819 = \frac{819}{1000}$

9%

Make the following percents a fraction:

a) 18% b) 3% c) 100% d) 34%

Make the following decimals a percent:

a) 0.01 b) 0.65 c) 0.987 d) 0.012

Make the following fractions a percent

$\frac{10}{20}$ $\frac{5}{9}$

Write these down

new

How Fractions, Ratios, Percents, and DECIMALS Are Related

1. All four represent PARTS OF A WHOLE

- Fractions, decimals, ratios, and percents are just *different ways* of showing the **same value**.
- They all tell us **how many parts we have** out of the **total number of parts**.

3. Percents

- Percent means **“per 100”**
- So a percent *is the same as* a fraction out of 100.
- Examples:
- $25\% = \frac{25}{100}$
- Whenever the denominator is 100, the percent is just the **top number.**

4. Ratios

A ratio compares two quantities.

When we write ratios like **part : whole**, they can also be connected to fractions and percents.

Examples:

- 25:100

These are the same as:

- **25** (fraction)

  100

5. Decimals

Decimals are another way to show **parts of 10 or 100**.

- The **tenths place** is out of 10
- The **hundredths place** is out of 100
- Examples:
- $0.25 = \frac{25}{100} = 25\%$
- If a decimal has **two digits** after the decimal (like 0.34), it is always out of **100**.

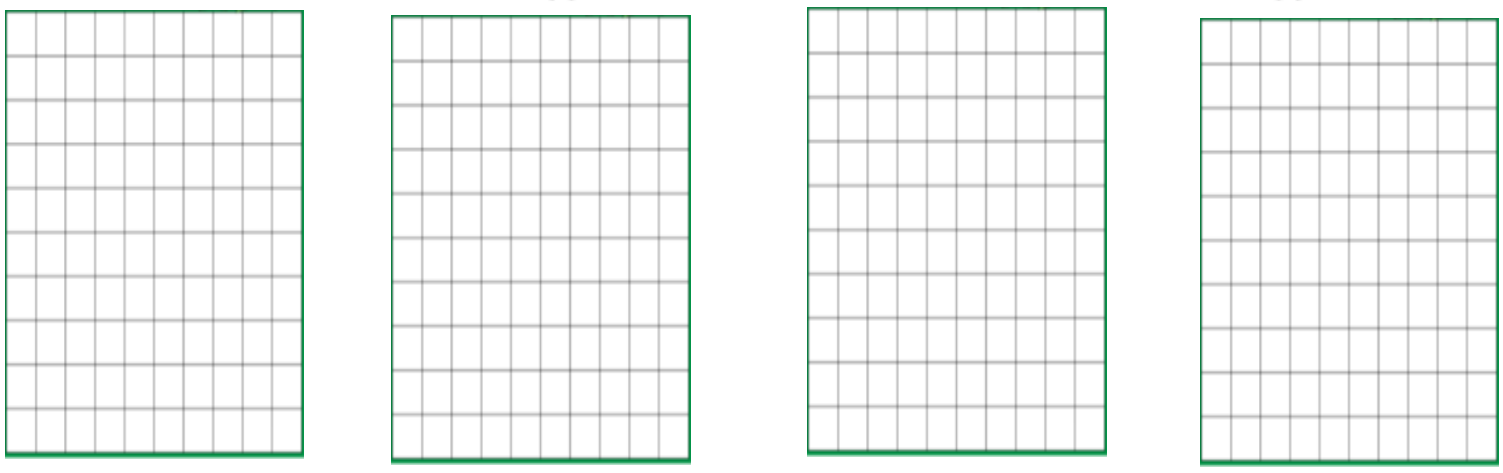
8. Write as a percent. Then write as a decimal.

a) 64 out of 100

b) $\frac{50}{100}$

c) 1 out of 100

d) $\frac{17}{100}$



How to Convert Between Forms

Fraction → Percent

If the fraction is out of 100:

top number = percent

Example: $\frac{34}{100} = 34\%$

Percent → Fraction

Write it over 100:

Example:

$82\% = \frac{82}{100}$

How to Convert Between Forms

Decimal → Percent

Move the decimal **two places right**.

Example:

0.41 → 41%

Percent → Decimal

Move the decimal **two places left**.

Example:

66% → 0.66

Make the following percents a fraction:

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Make the following decimals a percent:

a) 0.01 b) 0.65 c) 0.987 d) 0.012

Make the following fractions a percent

$\frac{10}{20}$ $\frac{5}{9}$