Student Learning Centre

Different forms of numbers:
Percentages, Fractions & Decimals

Flinders UNIVERSITY
inspiring achievement

Percentages to Fractions

Write down the percent divided by 100. For example: $63\% = \frac{63}{100}$

If the percentage you need to convert is not a whole number then multiply both the numerator and denominator by 10 for every number after the decimal point.

For example: $\frac{42.5}{100}$

Step 1) Multiply the top and bottom by 10 (as there is 1 digit after the decimal point in this example):

$$\frac{42.5}{100} \frac{\times 10}{\times 10} = \frac{425}{1000}$$

Step 2) Simplify the fraction to get the lowest denominator while keeping the numerator as a whole number:

$$\frac{425}{1000} \frac{\div 25}{\div 25} = \frac{17}{40}$$

Fractions to Percentages

Using ratios and proportions we know: $\frac{Numerator\ of\ fraction}{Denominator\ of\ fraction} = \frac{\%}{100}$

For example: $\frac{7}{8} = \frac{?}{100}$

Step 1) Cross multiply the two known sides: $\frac{7}{8}$ $\frac{?}{100}$ 7 x 100 = **700**

Step 2) Divide the answer (700) by the left over number (8):   700 ÷ 8 **= 87.5%**

Decimals to Percentages | Percentages to Decimals

A percentage means "out of 100". As there are two decimal places in 100 we move the decimal two places:

decimal to percentage	percentage to decimal
Move the decimal two places to the **RIGHT**	Move the decimal two places to the **LEFT**
0.55 ⟶ 55%	55% ⟶ 0.55
0.645 ⟶ 64.5%	64.5% ⟶ 0.645

Converting Decimals to Fractions

To convert a decimal to a fraction, write the decimal part as a fraction with a denominator that is a power of 10 ….100 ….1000
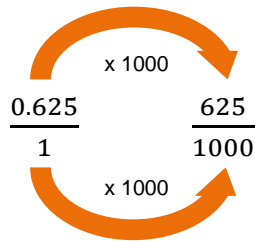
This can be done by three steps. For example, convert 0.625 into a percentage:

Step 1) Divide the decimal by 1 (the decimal being on the numerator and 1 being on the denominator).

$$\mathbf{0.625} = \frac{0.625}{1} \quad \frac{Numerator}{Denominator}$$

Step 2) Multiply both the numerator and denominator by 10 for every number after the decimal point. For example, if there are two numbers after the decimal point then multiply by $10 \times 10 = 100$, if there are three, use 1000 etc

As there are three decimal places in 0.625 we multiply it by $10 \times 10 \times 10 = 1000$

x 1000

$$\frac{0.625}{1} \qquad \frac{625}{1000}$$

x 1000

> Remember, whatever is done to the denominator must be done to the numerator.

Step 3) Simplify the fraction (if necessary)

Converting fractions to decimals

Step 1) Find a whole number, so that when you multiply the denominator by that number, it becomes a power of 10 (i.e. $10, 100, 1000$ etc.) .

For example: Using $\frac{7}{8}$ is $8 \times \mathbf{\color{red}125} = 1000$

Step 2) Multiply the numerator and denominator by that number $\frac{7}{8} = \frac{7 \times 125}{8 \times 125} = \frac{875}{1000}$

Step 3) Write down the numerator and move the decimal point one space to the left for every zero in the denominator. So 1000 has 3 zeros so we move the numerator 875 three spaces to the left:

$$\frac{\mathbf{875}}{\mathbf{1000}} \quad = \quad \mathbf{875} \quad = \quad \mathbf{0.875}$$

Answer: $\frac{7}{8} = \mathbf{0.875}$