

Fractions, Decimals and Percentages

Numbers can appear as percentages, fractions or decimals. You need to know how to convert between them.

Percentage to Fraction

You can change a percentage to a fraction by writing the percentage 'out of 100'.

$$62\% = \frac{62}{100}$$

You then need to check if the fraction can be simplified

62 and 100 are both even, so you can divide both numbers by 2.

$$62\% = \frac{62 \div 2}{100 \div 2} = \frac{31}{50}$$

$\frac{31}{50}$ can not be simplified any further.

$$31\% = \frac{31}{50}$$

Percentage to Decimal

You can change a percentage to a decimal by dividing by 100

Change 62% to a decimal

Remember dividing by 100 you need to write a decimal point, then move it to left 2 times.

$$62. = 6.2 \quad \text{Move Once}$$

$$62. = 0.62 \quad \text{Move Twice}$$

$$62\% = 0.62 \text{ as a decimal}$$

Fraction to Percentage

You can change a fraction to a percentage in 2 ways.

1. Try to change the denominator to 100

$$\frac{13}{20} \times 5$$

$$= \frac{65}{100}$$

$$\frac{65}{100} \text{ is equivalent to } 65\%$$

Multiply the denominator by 5 to change it to 100. You also need to multiply the numerator by 5.

2. Change it to a decimal first, then change from decimal to fraction

Some conversions to remember

$$25\% = \frac{1}{4} = 0.25$$

$$50\% = \frac{1}{2} = 0.5$$

$$75\% = \frac{3}{4} = 0.75$$

$$10\% = \frac{1}{10} = 0.1$$

Decimal to Fraction

You can change a decimal to a fraction by using knowledge of place value.

Write 0.34 as a fraction in its simplest form.

There is a 3 in the tenths column and a 4 in the hundredths column. Altogether this makes 34 hundredths which is $\frac{34}{100}$ when written as a fraction.

$$0.34 = \frac{34}{100}$$

But now you need to simplify $\frac{34}{100}$

34 and 100 are both even so you can divide them both by 2.

$$\frac{34 \div 2}{100 \div 2} = \frac{17}{50}$$

$$0.34 = \frac{17}{50}$$

Decimal to percentage

You can change a decimal to a percentage by multiplying by 100

Change 0.37 to a Percentage

Remember multiplying by 100 you need to move the decimal point to the right by 2 places.

$$0.37 \times 100 = 0.37 \rightarrow 37\%$$

Move Twice

$$0.37 = 37\% \text{ as a Percentage}$$

Fraction to Decimal

You can change a fraction to a decimal by trying to change the denominator to 100.

$$\frac{13}{20} \times 5 = \frac{65}{100} = 0.65$$

Sometimes you can't do this, so you can divide the numerator by the denominator