

Linear Equations

A **linear equation** contains variables that do not have any terms that are raised to a power other than one.

A **linear equation** will make a **straight line graph**.

They have the general form $ax + by + c = 0$ sometimes written as $y = ax + b$

 Examples

$$2x - 3y + 4 = 0$$

$$3y - 7x = 8$$

$$y = 5x + 2$$

$$4x = 12$$

Solving Linear Equations

Solving linear equations allows us to calculate the value of an unknown variable in a linear equation by using inverse operations.

 Example

Solve $3x + 6 = 18$

$$3x + 6 = 18$$

$$\begin{array}{cc} -6 & -6 \end{array}$$

$$3x = 12$$

$$\begin{array}{cc} \div 3 & \div 3 \end{array}$$

$$x = 4$$

 Example

Solve $5x + 6 = 2x + 9$

$$5x + 6 = 2x + 9$$

$$\begin{array}{cc} -2x & -2x \end{array}$$

$$3x + 6 = 9$$

$$\begin{array}{cc} -6 & -6 \end{array}$$

$$3x = 3$$

$$\begin{array}{cc} \div 3 & \div 3 \end{array}$$

$$x = 1$$