

Sketching Parabolas

Q. How can you sketch the graph of a parabola quickly ?

A. Find out where it crosses each axis.

Example $y = x^2 - 2x - 8$

On the y-axis $x = \underline{\hspace{2cm}}$ so $y = \underline{\hspace{2cm}}$

The graph crosses the y-axis at (,)

Factorise $y = x^2 - 2x - 8$

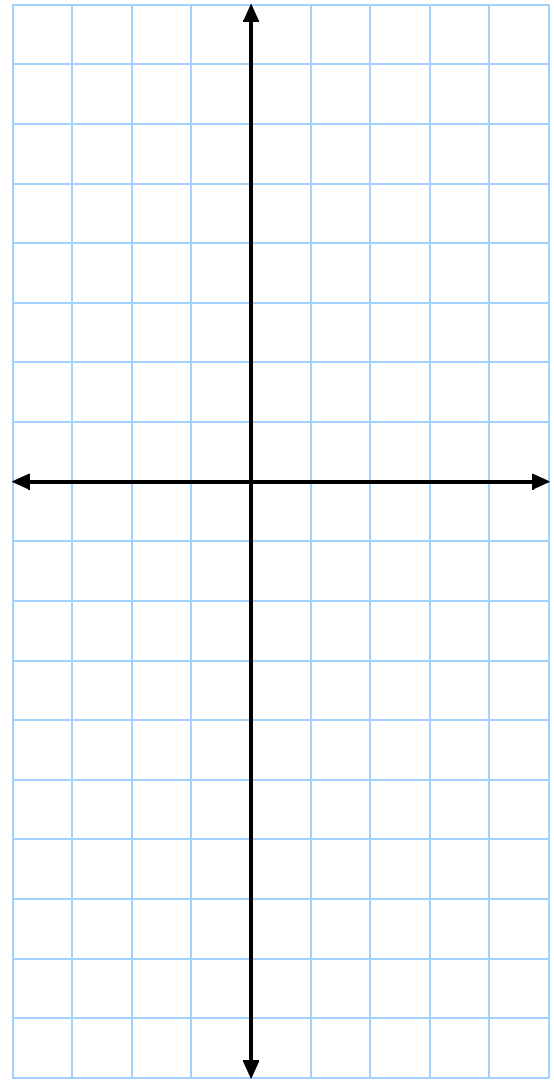
On the x-axis $y = \underline{\hspace{2cm}}$

For y to have this value $x = \underline{\hspace{2cm}}$ or $x = \underline{\hspace{2cm}}$

The graph crosses the x-axis

at (,) and (,)

Mark the three points on the grid.



The parabola is **symmetrical**. Draw the line of symmetry.

The equation of the line of symmetry is

At the 'bottom' of the parabola y has its **minimum** value.

The co-ordinates of the **minimum point** are (,)

Sketching Parabolas

$$y = x^2 + 2x - 15$$

On the y-axis $x = \underline{\hspace{2cm}}$ so $y = \underline{\hspace{2cm}}$

The graph crosses the y-axis at ($\underline{\hspace{2cm}}$, $\underline{\hspace{2cm}}$)

Factorise $y = x^2 + 2x - 15$

On the x-axis $y = \underline{\hspace{2cm}}$

For y to have this value $x = \underline{\hspace{2cm}}$ or $x = \underline{\hspace{2cm}}$

The graph crosses the x-axis

at ($\underline{\hspace{2cm}}$, $\underline{\hspace{2cm}}$) and ($\underline{\hspace{2cm}}$, $\underline{\hspace{2cm}}$)

Mark the three points on the grid.

The parabola is **symmetrical**.

Draw the line of symmetry.

The equation of the line of symmetry is $\underline{\hspace{4cm}}$

At the 'bottom' of the parabola

y has its **minimum** value.

The co-ordinates of the **minimum point**

are ($\underline{\hspace{2cm}}$, $\underline{\hspace{2cm}}$)

