b)

Sketch the graph of $y=x^{2}-2 x-3$.

The graph crosses the $y$-axis at $(0,8)$
The graph crosses the $x$-axis when $y=0$.
Where does the graph cross the $x$-axis?

What are the coordinates of the turning point of the graph?

What does the graph look like?

The graph crosses the $y$-axis when $x=0$.
Where does the graph cross the $y$-axis?

$$
\begin{aligned}
& \text { Solve } x^{2}-6 x+8=0 \\
& \quad(x-4)(x-2)=0 \\
& x=4 \text { and } x=2 .
\end{aligned}
$$

The graph crosses the $x$-axis at $(4,0)$ and $(2,0)$ Complete the square for $x^{2}-6 x+8$.

$$
(x-3)^{2}-1
$$

The graph's turning point is at $(3,-1)$


The graph crosses the $y$-axis when $x=0$.
Where does the graph cross the $y$-axis?

$$
\begin{aligned}
& \text { Substituting, when } x=0, \\
& y=0^{2}-2 \times 0-3=-3
\end{aligned}
$$

The graph crosses the $y$-axis at $(0,-3)$
The graph crosses the $x$-axis when $y=0$.
Where does the graph cross the $x$-axis?

$$
\begin{aligned}
& \text { Solve } x^{2}-2 x-3=0 . \\
& \qquad(x-3)(x+1)=0 \\
& x=3 \text { and } x=-1 .
\end{aligned}
$$

The graph crosses the $x$-axis at $(3,0)$ and $(-1,0)$
What are the coordinates of the turning point of the graph?

What does the graph look like?


Sketch the graph of $y=x^{2}+4 x-5$.
Sketch the graph of $y=x^{2}-6 x+5$.
The graph crosses the $y$-axis when $x=0$.

## Where does the graph cross the

 $y$-axis?$$
\begin{aligned}
& \text { Substituting, when } x=0 \\
& y=0^{2}+4 \times 0-5=-5
\end{aligned}
$$

The graph crosses the $y$-axis at $(0,-5)$

Where does the graph cross the $x$-axis?

What are the coordinates of the turning point of the graph?

What does the graph look like?



