**Sketching Quadratic Graphs**

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

**Shape** – Is it $∪$-shaped or $∩$-shaped?

**Y-Axis** – Find out where it crosses the y-axis by putting $x=0$.



**Turning Point**– Complete the square into the format $(x-p)^{2}+q$ where the turning point is $(p,q)$

**X-Axis** – Find out where it crosses the x-axis by putting $y=0$, then solving the quadratic equation.

1. Sketch the graph of $y=x^{2}-6x-16$

**Y-Axis** – Find out where it crosses the y-axis by putting $x=0$.

**Shape** – Is it $∪$-shaped or $∩$-shaped?



**Turning Point**– Complete the square into the format $(x-p)^{2}+q$ where the turning point is $(p,q)$

**X-Axis** – Find out where it crosses the x-axis by putting $y=0$, then solving the quadratic equation.

1. Sketch the graph of $y=12+4x-x^{2}$

**Y-Axis** – Find out where it crosses the y-axis by putting $x=0$.

**Shape** – Is it $∪$-shaped or $∩$-shaped?



**Turning Point**– Complete the square into the format $q-(x-p)^{2}$ where the turning point is $(p,q)$

**X-Axis** – Find out where it crosses the x-axis by putting $y=0$, then solving the quadratic equation.

1. Sketch the graph of $y=2x^{2}-4x+7$

**Y-Axis** – Find out where it crosses the y-axis by putting $x=0$.

**Shape** – Is it $∪$-shaped or $∩$-shaped?



**Turning Point**– Complete the square into the format $a\left(x-p\right)^{2}+q$ where the turning point is $(p,q)$

**X-Axis** – Find out where it crosses the x-axis by putting $y=0$, then solving the quadratic equation.