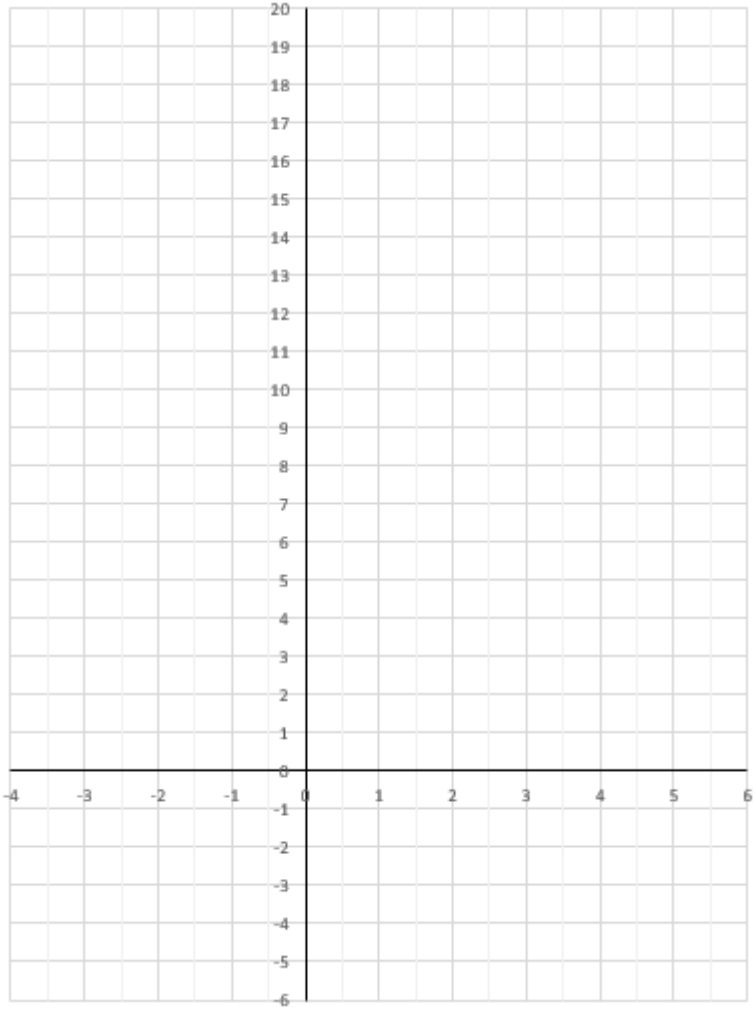
Sketching Quadratic Graphs

(a) Sketch the graph of $y = x^2 - 2x - 3$

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)



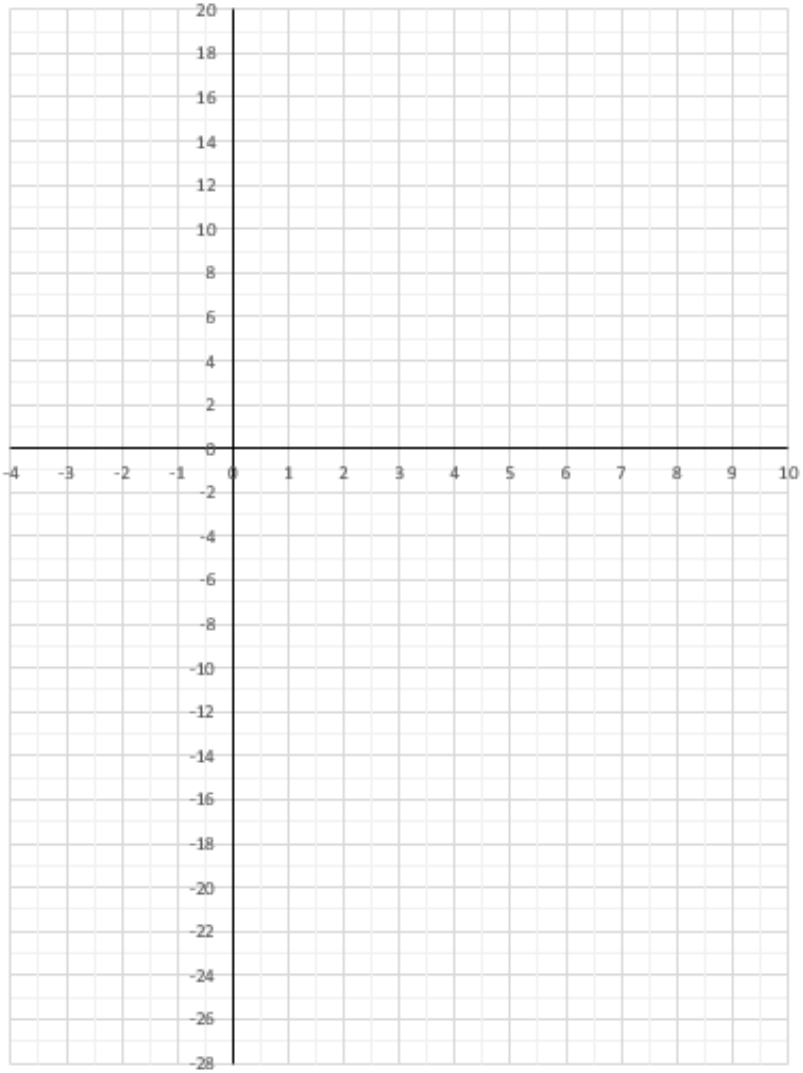
Y-Axis – Find out where it crosses the y-axis by putting $x = 0$.

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

(b) Sketch the graph of $y = x^2 - 6x - 16$

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)



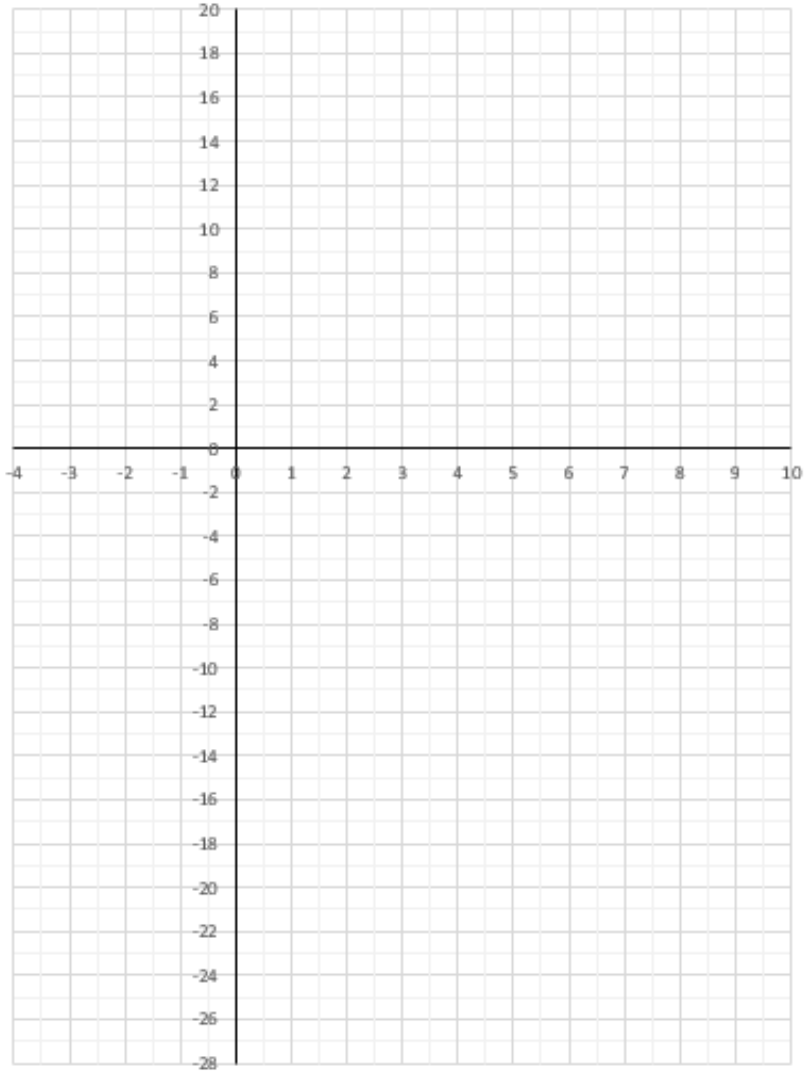
Y-Axis – Find out where it crosses the y-axis by putting $x = 0$.

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

(c) Sketch the graph of $y = 12 + 4x - x^2$

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)



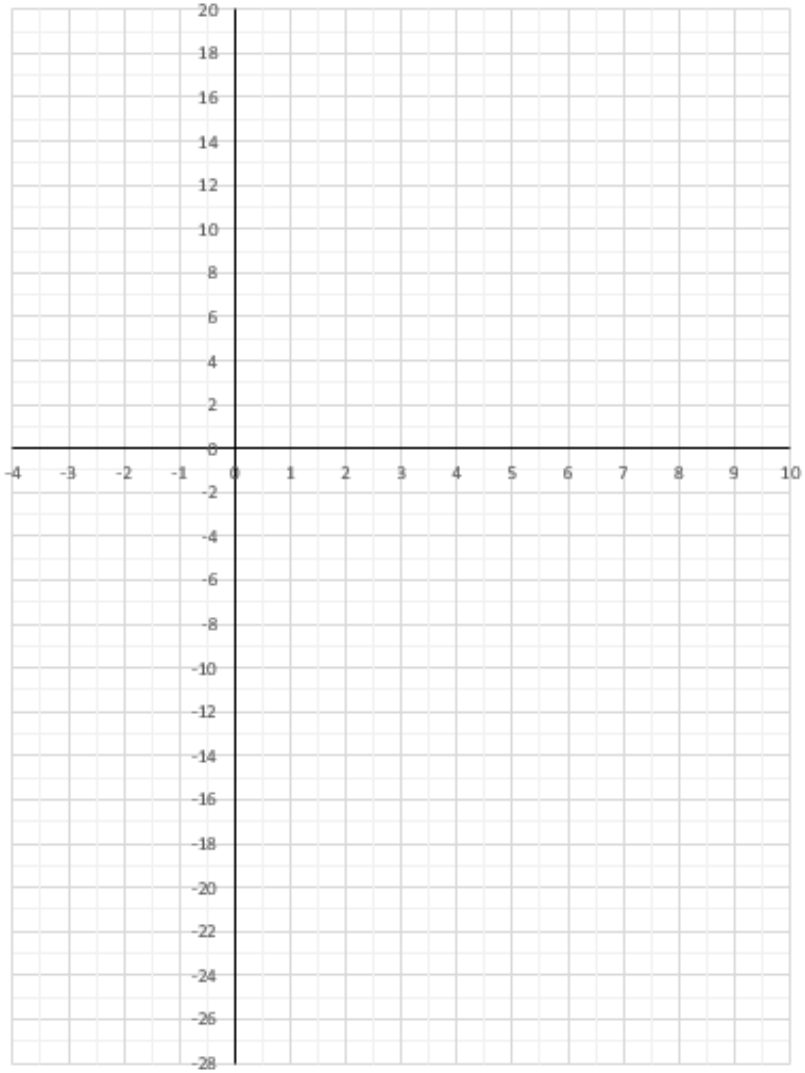
Y-Axis – Find out where it crosses the y-axis by putting $x = 0$.

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

(d) Sketch the graph of $y = 2x^2 - 4x + 7$

Shape – Is it ∪-shaped or ∩-shaped?

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



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

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