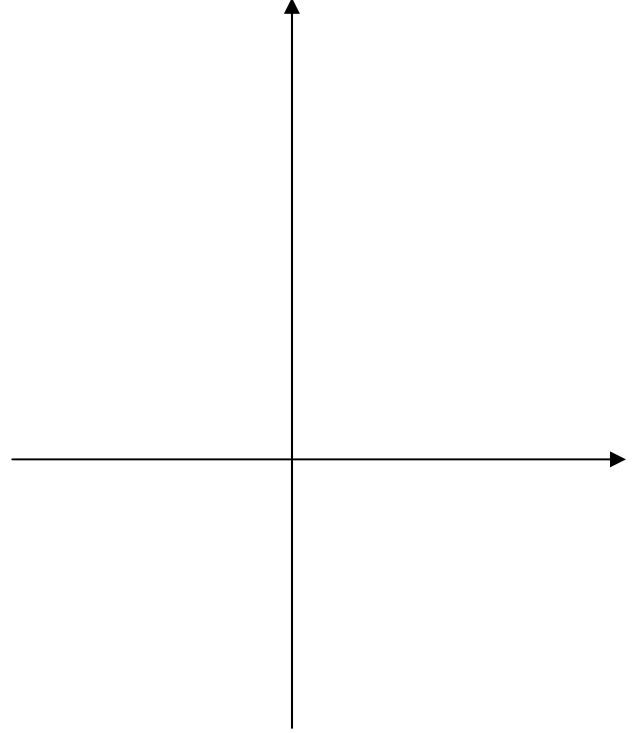


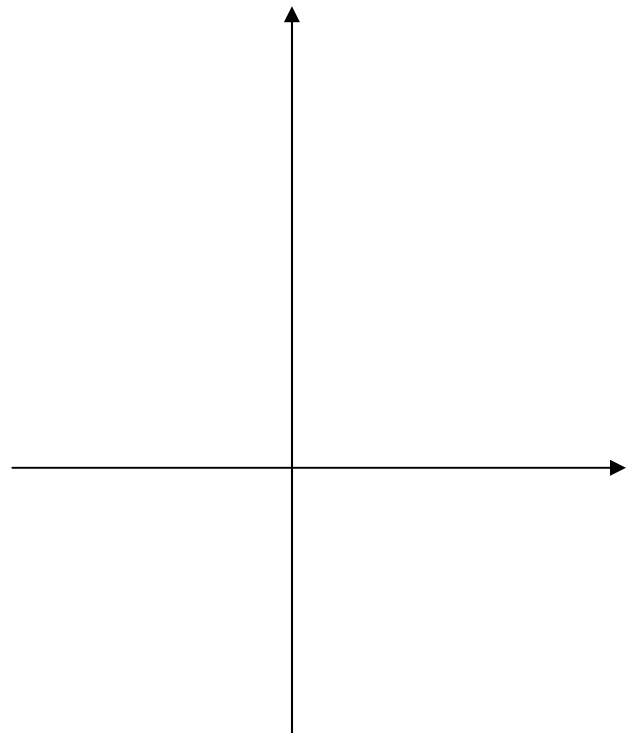
SOLVING QUADRATIC INEQUALITIES

First **FACTORISE** the quadratic expression then draw a **sketch** of its graph. Show the coordinates of any points where the graphs cross the axes. On which parts of the graph is the inequality true? Write inequalities to show the range of values of x which make the inequality true

$$x^2 + 7x + 10 < 0$$



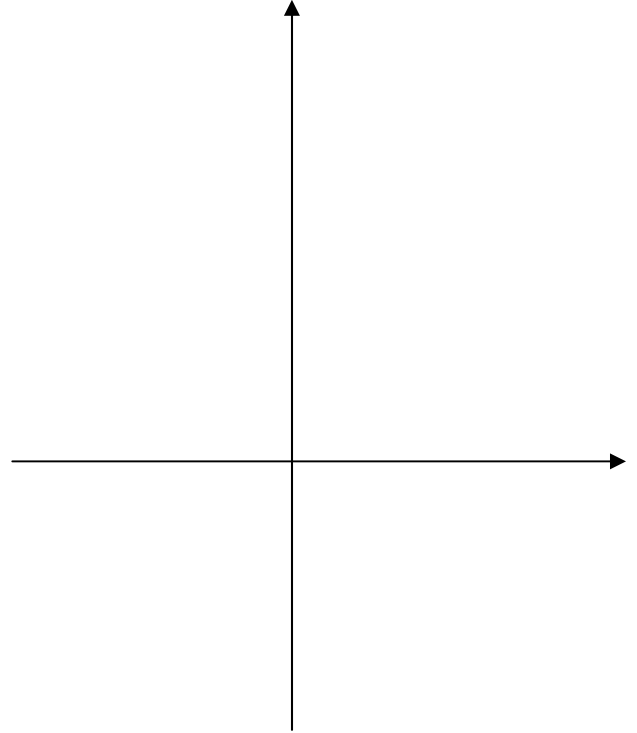
$$x^2 + 2x - 8 \geq 0$$



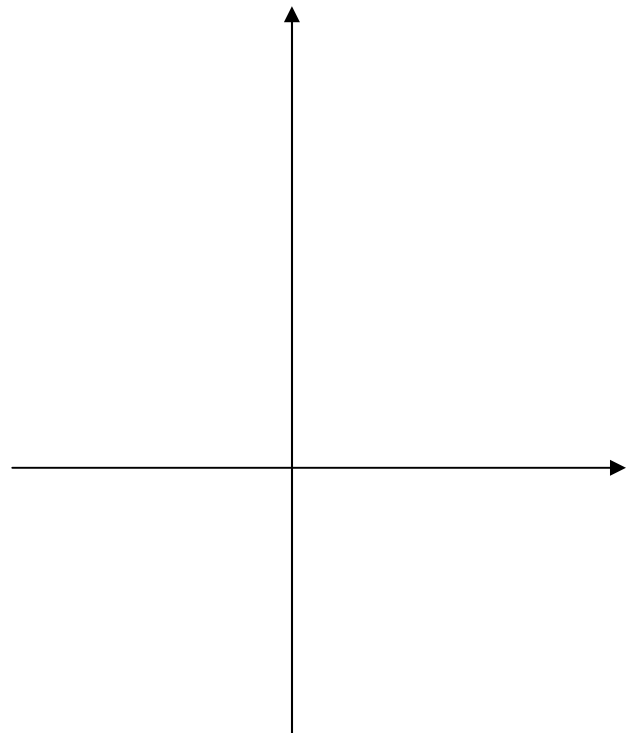
SOLVING QUADRATIC INEQUALITIES

Draw a **sketch** of the relevant quadratic graph. Show the coordinates of any points where the graphs cross the axes. On which parts of the graph is the inequality true ? Write inequalities to show the range of values of x which make the inequality true

$$x^2 > 9$$



$$x^2 - 25 \leq 0$$



SOLVING QUADRATIC INEQUALITIES

First **FACTORISE** the quadratic expression then draw a **sketch** of its graph. Show the coordinates of any points where the graphs cross the axes. On which parts of the graph is the inequality true? Write inequalities to show the range of values of x which make the inequality true

$$x^2 + 7x + 10 < 0$$

$$(x + 2)(x + 5) < 0$$

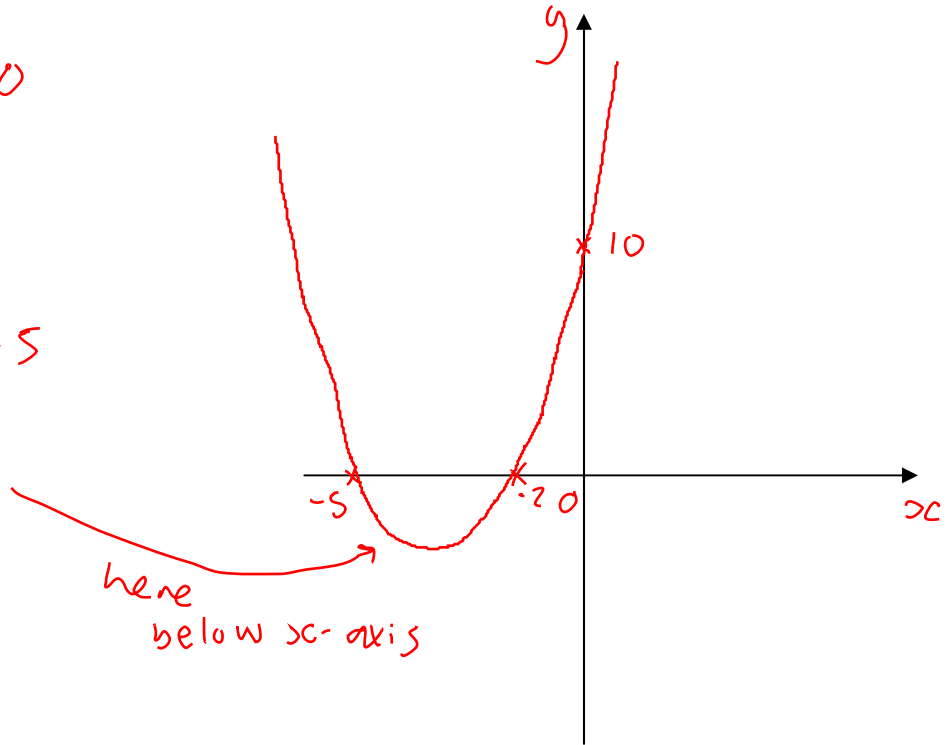
$$y = (x + 2)(x + 5)$$

Crosses x -axis at

$$x = -2 \text{ and } x = -5$$

$$x^2 + 7x + 10 < 0$$

$$-5 < x < -2$$

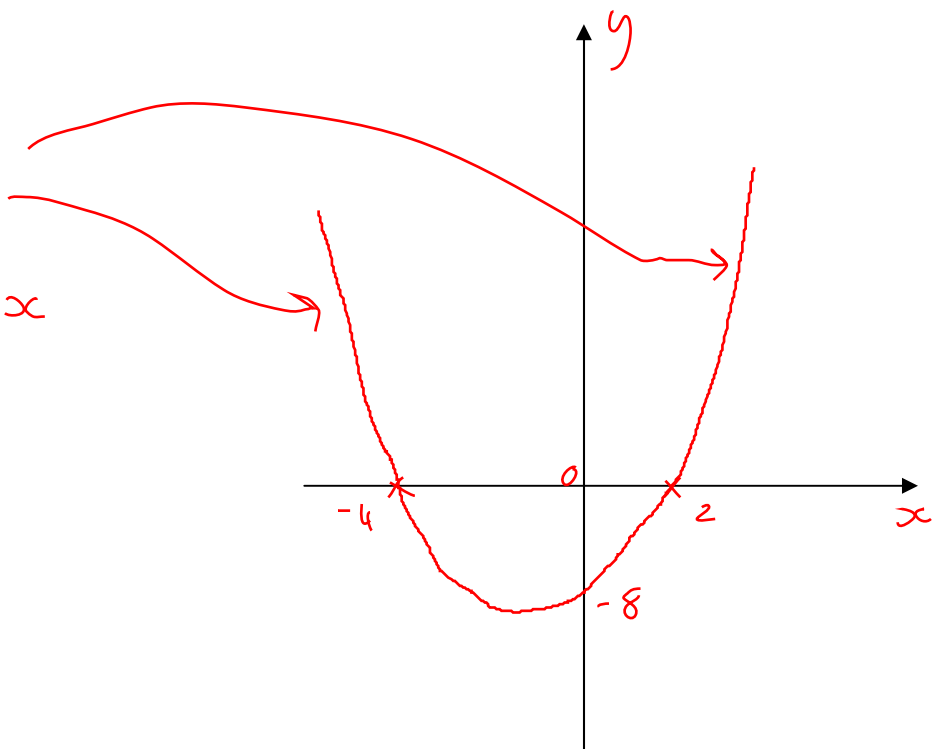


$$x^2 + 2x - 8 \geq 0$$

$$(x + 4)(x - 2) \geq 0$$

The inequality is true
Above the x -axis

$$x < -4 \text{ or } 2 < x$$



SOLVING QUADRATIC INEQUALITIES

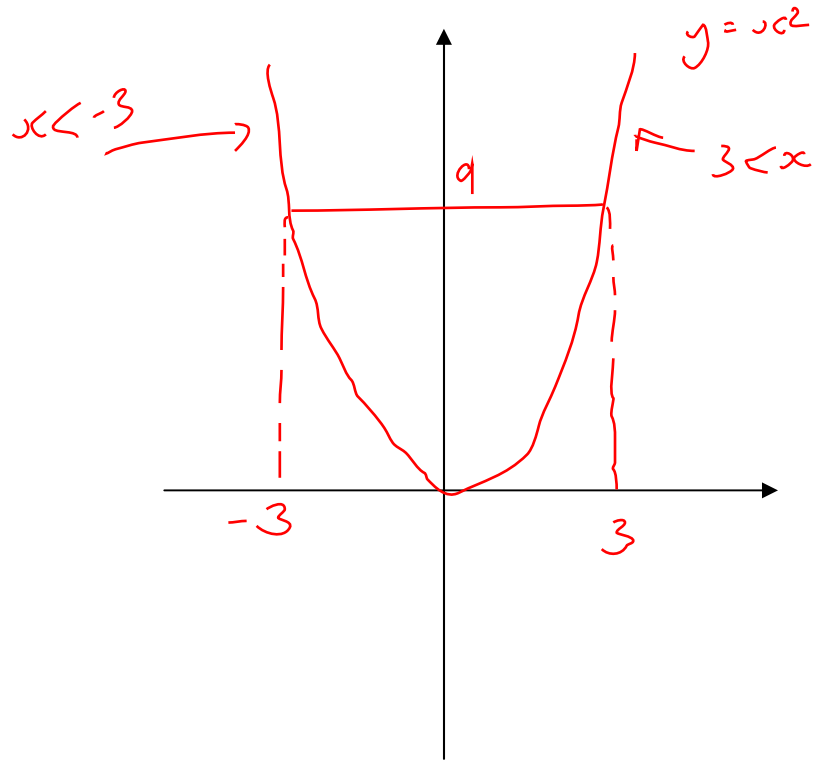
Draw a **sketch** of the relevant quadratic graph. Show the coordinates of any points where the graphs cross the axes. On which parts of the graph is the inequality true? Write inequalities to show the range of values of x which make the inequality true

$$x^2 > 9$$

$$x < -3$$

$$\text{or } 3 < x$$

A slightly different way of thinking about it



$$x^2 - 25 \leq 0$$

$$(x - 5)(x + 5) \leq 0$$

$$y = (x - 5)(x + 5)$$

crosses x-axis at

$$x = 5 \text{ and } x = -5$$

$$(x - 5)(x + 5) \leq 0$$

is true below the x-axis

$$-5 \leq x \leq 5$$

