

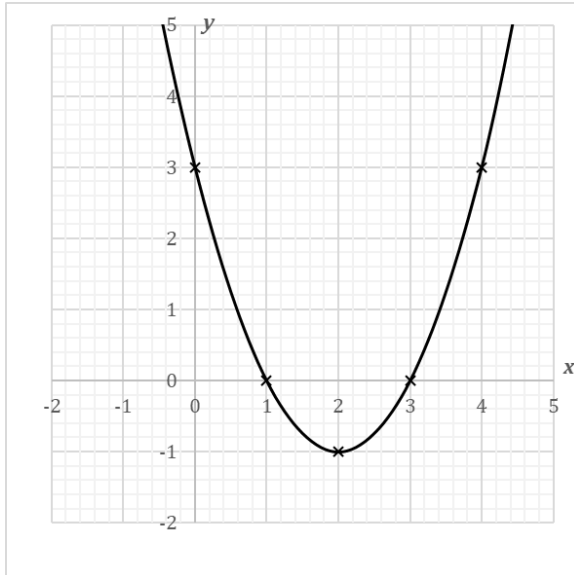
Quadratic Inequality Graphs Mark Scheme

1(a)

$$(x - 3)(x - 1)$$

[2] – Correct factorisation

1(b)



$$\therefore x^2 - 4x + 3 < 0, \text{ when } x > 1 \text{ and } x < 3$$

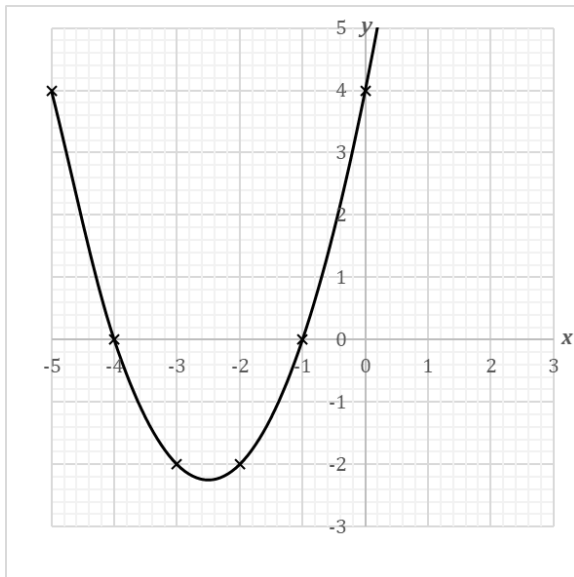
[1] Greater than 1
[1] Less than 3

2(a)

$$(m + 4)(m + 1)$$

[2]

2(b)



$$\therefore m^2 + 5m + 4 > 0, \text{ when } m < -4 \text{ and } m > -1$$

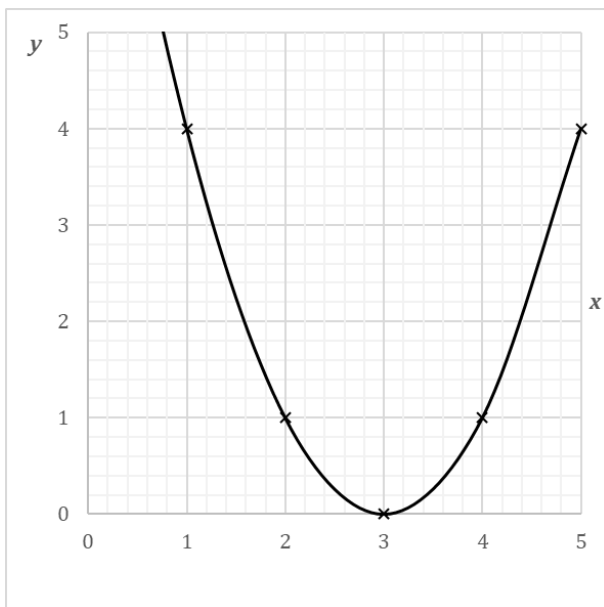
[1] Less than -4
[1] Greater than -1

Turn over ►

3

$$x^2 - 6x + 9 > 0 = (x - 3)(x - 3) > 0$$

[2] – Correct factorisation

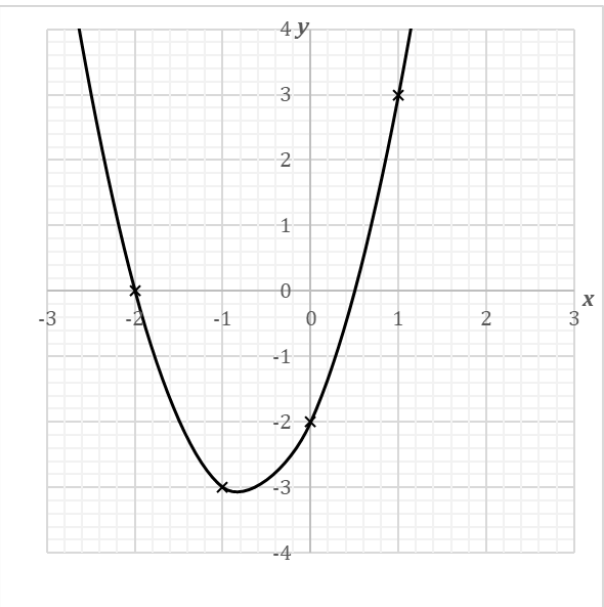
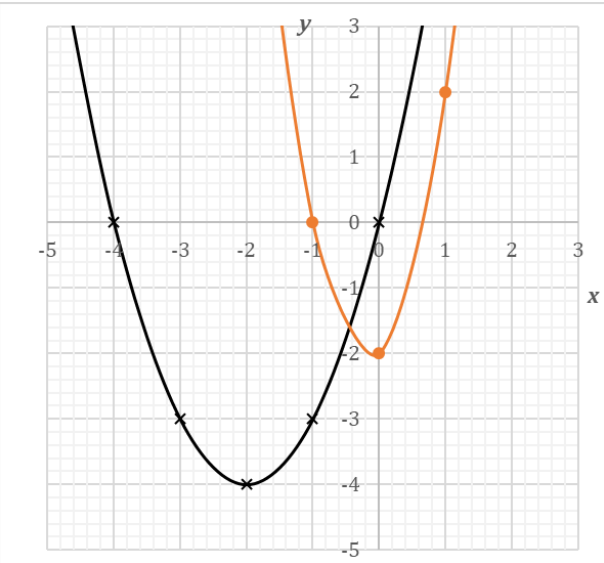


$$x > 3 \text{ and } x < 3$$

[1] Greater than 3

[1] Less than 3

Turn over ►

| | | |
|---|---|--|
| 4 | $(2k - 1)(k + 2)$ | [2] – Correct factorisation |
| |  | [2] – Greater than $\frac{1}{2}$ [1] – Less than -2 |
| 5 | (1) $x^2 + 4x > 0$; and (2) $(x + 1)(3x - 2) > 0$ | |
| |  <p>(1) - Black line, cross markers (2) - Orange line, circle markers</p> | [1] – Line 1, x intercept at 0 [1] – Line 1, x intercept at -4 [1] – Line 2, x intercept at -1 [1] – Line 2, x intercept at $\frac{2}{3}$ |
| | $\therefore x^2 + 4x > 0, \text{ when } x < -4 \text{ and } x > 0$ $\therefore (x + 1)(3x - 2) > 0, \text{ when } x < -1 \text{ and } x > \frac{2}{3}$ The values of x that satisfy both inequalities are: $x < -4$ $x > \frac{2}{3}$ | [1] – For less than -4 [1] – For greater than $\frac{2}{3}$ |

END