Inequalities and simultaneous equations

A LEVEL LINKS
Scheme of work: 1d. Inequalities – linear and quadratic (including graphical solutions)

Key points

- First replace the inequality sign by = and solve the quadratic equation.
- Sketch the graph of the quadratic function.
- Use the graph to find the values which satisfy the quadratic inequality.

Practice question

1   Solve the simultaneous equations

$$y - 3x + 2 = 0$$

$$y^2 - x - 6x^2 = 0$$

2   Find the set of values of x for which

$$(2x + 1)(x - 2) > 2(x + 5)$$

Answer

1 $x = \dfrac{1}{3}$ $x = 4$

$y = -1$ $y = 10$

2 $x < -\dfrac{3}{2}, x > 4$