

## Quadratic Inequalities:

### Examples

1. Solve  $x^2 + 2x - 15 > 0$

2. Solve  $x^2 + 2x - 15 \leq 0$

3. Solve  $x^2 + 5x \geq -4$

4. Solve  $x^2 < 9$

## Test Your Understanding

Find the set of values of  $x$  for which

(a)  $3(x - 2) < 8 - 2x$ , **(2)**

(b)  $(2x - 7)(1 + x) < 0$ , **(3)**

(c) both  $3(x - 2) < 8 - 2x$  **and**  $(2x - 7)(1 + x) < 0$ . **(1)**

Given that the equation  $2qx^2 + qx - 1 = 0$ , where  $q$  is a constant, has no real roots,

(a) show that  $q^2 + 8q < 0$ . **(2)**

(b) Hence find the set of possible values of  $q$ . **(3)**

Division by x

Find the set of values for which  $\frac{6}{x} > 2$ ,  $x \neq 0$