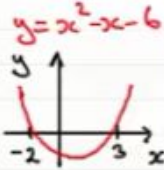
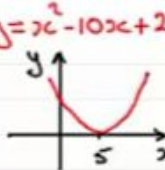
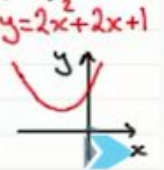




Air maths tuition

Interact, engage and perform

Nature of Roots for a Quadratic Equation (Discriminant)

$ax^2+bx+c=0 \Rightarrow x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$		Discriminant is b^2-4ac
$x^2-x-6=0$ $a=1, b=-1, c=-6$ $x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(-6)}}{2(1)}$ $= \frac{1 \pm \sqrt{25}}{2} = \frac{1 \pm 5}{2}$ $= 3 \text{ or } -2$ Different roots $b^2-4ac > 0$ 	$x^2-10x+25=0$ $a=1, b=-10, c=25$ $x = \frac{-(-10) \pm \sqrt{(-10)^2 - 4(1)(25)}}{2(1)}$ $= \frac{10 \pm \sqrt{0}}{2} = \frac{10 \pm 0}{2}$ $= 5 \text{ or } 5$ Equal roots (one root) $b^2-4ac = 0$ 	$2x^2+2x+1=0$ $a=2, b=2, c=1$ $x = \frac{-2 \pm \sqrt{2^2 - 4(2)(1)}}{2(2)}$ $= \frac{-2 \pm \sqrt{-4}}{4}$ No solution $b^2-4ac < 0$ 

With the acknowledgement of [Exam Solutions](#).
Find lots more revision sheets on [Air Maths Tuition](#).

[This Video](#)



Exam Solutions
m a t h s m a d e e a s y