

EXERCISE 1

1. Find the value of a, b and c from quadratic functions.

Quadratic function	a	b	c
1) $y = 2x^2 - 7x + 3$			3
2) $y = x(x - 2)$		-2	0
3) $y = -(x + 3)(x + 5)$	-1		-15
4) $y = (x + 5)(x + 1)$		6	
5) $y = 4x^2 - 1$	4	0	
6) $y = -(x^2 - x - 12)$	-1		12
7) $y = -(4 - x^2)$	1		-4
8) $y = 2\left(x + \frac{1}{2}\right)(x - 3)$		-5	-3
9) $y = -(-12 - 7x + 2x^2)$	-2	7	
10) $y = 11x - 4x^2 - 6$	-4	11	

EXERCISE 2

Fill ✓ and the correct answers in the blanks.

Equation	Graph		Equation of the axis of symmetry	Value		Turning point	
	Upwards	Downwards		Max.	Min.	Max.	Min.
1) $y = 12x^2$			$x =$		$y = 0$		(0,0)
2) $y = \frac{1}{3}x^2$			$x =$		$y = 0$		(0,0)
3) $y = -10x^2$			$x =$	$y = 0$		(0,0)	
4) $y = 0.5x^2$			$x =$		$y = 0$		(0,0)
5) $y = -8x^2$			$x =$	$y = 0$		(0,0)	

Sketch the quadratic graphs from equations.

1) $y = \frac{1}{4}x^2$

x	-6	-4	-2	0	2	4	6
y							

2) $y = x^2$

x	-3	-2	-1	0	1	2	3
y							

3) $y = -x^2$

x	-3	-2	-1	0	1	2	3
y							

EXERCISE 3

Find the x-intercepts of the graphs of quadratic functions. If the graph does not cut the x-axis, fill ✓ in the blanks 'not cut x-axis'.

Equation	Not cut x-axis	X-intercepts
1) $y = 2x^2 - 4$		$(\sqrt{2}, 0)$ and $(-\sqrt{2}, 0)$
2) $y = -x^2 - 5$		-
3) $y = 3x^2$		
4) $y = 2(x + 1)^2 - 6$		$(\sqrt{3} - 1, 0)$ and $(-\sqrt{3} - 1, 0)$
5) $y = -(x + 3)^2 - 9$		-
6) $y = -\frac{1}{2}(x - 1)^2 + 2$		$(3, 0)$ and
7) $y = 3(x - 2)^2 - 27$		$(5, 0)$ and
8) $y = 4x^2 - 4x$		and $(1, 0)$
9) $y = -x^2 + x + 2$		$(2, 0)$ and
10) $y = 2x^2 + x + 4$		-