



Q	Answer	Marks
1	(3, 5)	1
2	a) $x = 2$ and $x = 4$ b) $x = 3$	2
3	a) (2, 0) and (6, 0) b) (0, 12) c) U-shaped curve through (2, 0), (6, 0) and (0, 12), with its lowest point at (4, -4)	4
4	a) $x = -3$ and $x = 7$ b) $x = 2$ c) (2, -25)	3
5	a) (0, -3) b) $x = -1$ and $x = 3$ c) (1, -4)	3
6	a) $y = (x - 3)^2 - 2$ b) (3, -2) c) (0, 7)	3
7	a) $(x - 4)^2 - 9$ b) turning point (4, -9); line of symmetry $x = 4$ c) (1, 0) and (7, 0)	4
8	(-5, -27)	3
9	a) $y = -(x - 3)^2 + 4$ b) (3, 4), a maximum c) n-shaped curve with maximum (3, 4), crossing the x-axis at (1, 0) and (5, 0) and the y-axis at (0, -5)	4
10	a ($x = -2$)) 2 a ($x = 0$)) 6 a ($x = 2$)) 2 b) (0, 6) c) between 2 and 3	4
11	a) $x = 3$ b) $b = -6$, $c = 8$ c) (3, -1)	5
12	a ($x = -2$)) -8 a ($x = 0$)) -8 a ($x = 2$)) 0 b) $x = -4$ and $x = 2$ c) $x = -1$	4
13	a ($x = 1$)) -3 a ($x = 2$)) -4 a ($x = 4$)) 0 b) correct smooth parabola through (-1, 5), (0, 0), (1, -3), (2, -4), (3, -3), (4, 0), (5, 5) c) (2, -4)	5
14	a ($x = 2$)) -1 a ($x = 4$)) -5 a ($x = 6$)) -1 b) (4, -5) c) $x = 4$	5
15	a) $(x - 2)^2 - 9$ b) U-shaped parabola, turning point (2, -9), crossing the x-axis at (-1, 0) and (5, 0) and the y-axis at (0, -5)	5
16	a ($x = -1$)) -1 a ($x = 0$)) -3 a ($x = 2$)) 5 b) (0, -3) c) between 1 and 2	5
17	a ($x = -2$)) -4 a ($x = 0$)) -6 a ($x = 2$)) 0 b) correct smooth parabola through (-4, 6), (-3, 0), (-2, -4), (-1, -6), (0, -6), (1, -4), (2, 0), (3, 6) c) $x = -3$ and $x = 2$ d) x is approximately -1.6 and x is approximately 0.6	6

Full worked solutions, written out by hand, are on the solutions sheet for this topic.