



Q	Answer	Marks
1	a) $x = 2$ and $x = 4$ b) $x = 3$	2
2	a) 0, -2, 0 b) smooth U-shaped curve through (-3, 4), (-2, 0), (-1, -2), (0, -2), (1, 0), (2, 4)	4
3	a) (0, -3) b) $x = -1$ and $x = 3$ c) (1, -4)	3
4	a) $x = 2$ b) (2, -3) c) $x \approx 0.3$ and $x \approx 3.7$ d) $x \approx -0.2$ and $x \approx 4.2$	4
5	a) C b) D c) E	3
6	a) 12, 3, 1.5, 1 b) smooth curve through (0.5, 12), (1, 6), (2, 3), (3, 2), (4, 1.5), (6, 1) c) on the y-axis $x = 0$, and $6 \div 0$ cannot be worked out	4
7	a) 4, -2, 1 b) smooth curve through (-2, 1), (-1, 4), (0, 1), (1, -2), (2, 1)	4
8	a) 20 m, after 2 seconds b) 1 second and 3 seconds c) 4 seconds	4
9	a) $x = 0$ and $x = 3$ b) $x \approx 0.3$, $x = 2$ and $x \approx 3.7$	4
10	a) circle with centre (0, 0) and radius 4 b) 7 c) inside, because $2^2 + 3^2 = 13$, which is less than 16	4
11	a) reciprocal curve with one branch in the first quadrant and one branch in the third quadrant, approaching but never touching the axes b) There are no such points - the graph never crosses the axes	4
EXTENSION QUESTIONS		
12	a) $x = 0$ and $x = 3$ b) draw $y = x + 1$; $x \approx -0.2$ and $x \approx 4.2$	5
13	a) circle with centre (0, 0) and radius 5 b) straight line through (0, 1), (3, 4) and (-4, -3) c) (3, 4) and (-4, -3)	4

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