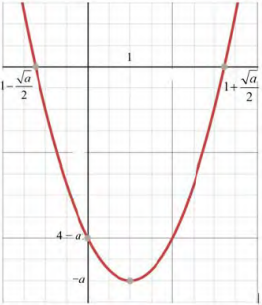


1	(a)		2, -1.5, -3, 0	2	B2	B1 for 2 or 3 values correct
	(b)			2	M1ft	At least 5 points plotted correctly fit from table dep on B1 in part (a)
					A1	For correct smooth curve.
Total 4 marks						

2		graph drawn in shape of a quadratic with a minimum in any quadrant $x = 1, y = 4(1 - 1)^2 - a$		4	M1	for a quadratic with a minimum
					M1	for finding the turning point (may be seen marked on the graph as $(1, -a)$)
		$x = 1 \pm \sqrt{\frac{a}{4}}$ oe or $y = 4 - a$			M1	for finding one of the intercepts (or award for any one correct coordinate shown on graph) $(0, 4 - a)$ or $(1 + \frac{\sqrt{a}}{2}, 0)$ or $(1 - \frac{\sqrt{a}}{2}, 0)$ Note: The 0's can be ignored (as shown in the diagram)
			Correct graph		A1	for a fully correct graph
						<ul style="list-style-type: none"> quadratic shape with minimum in the fourth quadrant and marked as $(1, -a)$ oe x-axis intercepts marked as $(1 + \frac{\sqrt{a}}{2}, 0)$ oe on the positive x-axis and $(1 - \frac{\sqrt{a}}{2}, 0)$ oe on the negative x-axis y-axis intercept marked as $(0, 4 - a)$ oe Note: The 0's can be ignored (as shown in the diagram)
Total 4 marks						

3	(a)		15, 0, -1, 3	2	B2	for 4 correct values (B1 for 2 or 3 correct values)
	(b)	$(-2, 15) (-1, 8) (0, 3) (2, -1) (3, 0) (4, 3)$		2	M1	(dep on B1) fit from (a) for at least 5 points plotted correctly
			correct graph		A1	for a correct graph (clear intention to go through all the points and which must be curved at the bottom) Note: If a fully correct graph is shown, but an incomplete table is shown in (a), then award the marks for (a)
Total 4 marks						

4	(a)		-0.2 and 2.2	2	B2	Both correct to 1 decimal place (B1 for $(-0.2, 0), (2.2, 0)$) or a single correct value to 1 decimal place or both values within -0.2 to -0.23 and 2.2 to 2.23)
	(b)	$(v \Rightarrow) -2x + 1$ oe seen		3	M1	Written – could be label on graph
		$y = -2x + 1$ drawn			M1	dep on previous M1 for drawing $y = -2x + 1$ passing through $(-1, 3)$ and $(2, -3)$ (allow 1 square tolerance)
			-0.6 and 1.6		A1	dep on M2 for both answers to 1 decimal place
Total 5 marks						

5		B	3	B1	
		A		B1	
		F		B1	
Total 3 marks					

6	(a)	x	-3	-2	-1	0	1	2	3	2	B2	for all correct values, otherwise B1 for 3 or 4 correct values
		y	8	2	-2	-4	-4	-2	2			
	(b)									2	M1	dep on B1 scored in (a) for at least 5 points plotted correctly (ft their table)
						correct curve					A1	for a fully correct curve (all coordinates correct and correctly plotted and joined with a curve and curved between (0, -4) and (1, -4))
											Total 4 marks	