

1	(a)		(1, 4)	B1	
	(b)		-0.4, 2.4	B1	
	(c)		3.75	B1	accept 3.7 – 3.8

2	(a)		1, -3	B1	cao
	(b)		-0.75, 2.75	B1	accept -0.7 to -0.8, 2.7 to 2.8
	(c)		-2.8	B1	cao

3	(a)		-0.4 to -0.2 and 3.2 to 3.4	M1 A1	for $(y =) x + 4$ for answers in the range -0.4 to -0.2 and 3.2 to 3.4
	(b)		1.6 to 2.5	M1 M1 A1	for drawing a tangent to the curve at $x = 2$ for method to find gradient of their tangent for answer in the range 1.6 to 2.5

4			Comment	B1	for correct mathematical comment eg line segments not a curve <b>or</b> should draw freehand <b>or</b> should not use a ruler, <b>or</b> should be a curve  NB Do not accept statements about scale or plotting accuracy.
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5	Sketch graph with TP at (2, -13) and intercepts at (0, -5), $(2 + \sqrt{\frac{13}{2}}, 0)$ and $(2 - \sqrt{\frac{13}{2}}, 0)$	B1 M1 M1 B1 C1	for a parabola drawn with intercept at the point (0, -5)  for the start of a method to find the roots of $y = 0$ , eg. $2(x - 2)^2 - 13 (= 0)$ oe or $(x =) \frac{- -8 \pm \sqrt{(-8)^2 - 4 \times 2 \times -5}}{2 \times 2}$  (dep) for method to find the roots, eg. $2 \pm \sqrt{\frac{13}{2}}$ oe  for turning point at (2, -13)  for a fully correct parabola drawn with turning point at (2, -13) and intercepts at (0, -5), $(2 + \sqrt{\frac{13}{2}}, 0)$ oe and $(2 - \sqrt{\frac{13}{2}}, 0)$ oe clearly shown	Turning point may be just seen and labelled on the sketch
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6	2.7 and -0.7	M1 M1 M1 A1	for $x^2 - 3 = 2x - 1$ oe <b>or</b> $x^2 - 3 - 2x + 1 (= 0)$ <b>or</b> completing the square eg $(y =) (x - 1)^2 - 1 - 2$  (dep M1) draws graph of $y = 2x - 1$ <b>or</b> drawing the translated graph <b>or</b> describing the translation in words <b>or</b> $-1.7 + 1 (= -0.7)$ <b>or</b> $1.7 + 1 (= 2.7)$  shows the points of intersection clearly for the given quadratic graph and linear graph <b>or</b> for one correct solution from appropriate supportive working  for $x$ in the range 2.6 to 2.8 <b>and</b> -0.6 to -0.8  SCB2 for plotting $y = 2x + 1$ <b>and</b> values for $x$ in the range -1.1 to -1.3 <b>and</b> 3.1 to 3.3	Line segments required For 1.7 allow from 1.6 to 1.8 For -1.7 allow from -1.8 to -1.6  Points indicated or attempt to read off $x$ -axis at the appropriate points – maybe indicated by dashes  No marks will be awarded for correct answers only
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7	B C D A	B2 (B1)	cao  for two or three correct)	
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