Yr 9 core mod 5 rev sheet 3 Answers

1)

5 (a) (i)	2	2	**M1** for numbers representing change in y / change in x Implied by $2k/k$
(ii)	$2x + 1$	2ft	**M1** for {their **(a)(i)**}x + j or $kx + 1$ (j,k not equal to 0)
(b) (i)	2 –2 2	2	**B1** for 2 correct
(ii)	7 points correct	3 ft	**B2** for 5 or 6 points correct **B1** for 3 or 4 points correct
	smooth curve	1	Must be close to parabolic in shape
(iii)	−1.5 to −1.3 cao 1.3 to 1.5 cao	1 1	
(c)	(−1, −1) and (3, 7) cao	1, 1	

2)

7 (a) (i)	−1, −3, 3	2	**B1** for any 2 correct

3)

6 (a)	70	2	**M1** for 180–140 or 40 at A oe
(b)	108	2	**M1** for 72 vertically opposite to given 72 or next to q or 108 next to 72 given
(c)	54	1	
(d)	68	1	
(e) (i)	Similar	1	Allow enlarged
(ii)	12.5	2	**M1** for $\dfrac{XZ}{10} = \dfrac{10}{8}$ oe or better

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4)

4	(a)	(i)	−2, −2.5, −10 5, 2.5, 1.25	2	**B1** for 4 or 5 correct
		(ii)	10 points correctly plotted	3ft	**B2**ft for 8 or 9 points correctly plotted. **B1**ft for 6 or 7 points correctly plotted
			Smooth curve	1	
	(b)	(i)	Ruled line through both given points	2	**B1** for not ruled but otherwise correct or through just 1 of the points
		(ii)	(−2.5, −4),(2, 5)	2ft	**B1** for 1 correct. ft their line and their curve.
	(c)	(i)	2 cao	2	**M1** for change in y / change in x for 2 correct points
		(ii)	(y =) $2x + 1$	1ft	Ft (y=) their (c)(i) x + intercept of their line in (b)(i)

5)

8	(a)		(20) 13 (8) 5 4 5 (8) 13 (20)	3	**B2** for 4 correct **B1** for 2 or 3 correct or a correct substitution seen
	(b)		correctly plotting 9 points and connecting with a smooth curved line	4	**P3** for correctly plotting 9 points, **P2** for correctly plotting 7 or 8 points and **P1** for 5 or 6 points **C1** for a smooth curve
	(c)	(i)	correct line of symmetry cao	1	p x
		(ii)	$x = 1$	1ft	ft their line
	(d)	(i)	correct line	1	
		(ii)	−1.9 to −1.7 and 3.7 to 3.9	1ft,1ft	**SC1** for correct co-ordinates
	(e)	(i)	−3 cao	1	
		(ii)	(0,6) cao	1	
		(iii)	$y = c − 3x$	1	c can be any number except 6

6)

6	(a)		−1, −4, 1.3, 1	2	**B1** for −1 and 1 and **B1** for −4 and 1.3
	(b)		10 points plotted ½ small square accuracy	P3ft	**P2** for 8 or 9 points, **P1** for 5 or 6 or 7 points
			smooth correct curves not across y-axis	C1	
	(c)		−1.6 correct or ft	1ft	ft from their graph
	(d)	(i)	$y = 5$ drawn	1	
		(ii)	(x =) 0.8 correct or ft	1ft	ft from their graph
	(e)	(i)	Ruled line drawn from (−0.5, −8) to (2, 2)	2	**B1** for ruled line drawn from either point not horizontal or vertical
		(ii)	4 cao	1	
		(iii)	$y = 4x − 6$ or y = their **(e)(ii)** x + their intercept or $y = 4x$ + their intercept	2ft	**B1** ft $y = 4x + k$ or y = their **(e)(ii)** $x + k$ or $y = jx − 6$ or $y = jx$ + their intercept

7)

9	(a)	(i)	8, 3	1, 1	
		(ii)	5 points correctly plotted	2ft	**P1** for 4 correct points ft
			Smooth curve through their 5 points	1	
		(iii)	$3.4 \leqslant x \leqslant 3.6$	1ft	ft their intersection with *x*-axis
	(b)	(i)	3, 2, 1.5	1, 1, 1	**B1** each
		(ii)	8 points correctly plotted	2ft	**P1** for 6 or 7 points
			Smooth branch of rectangular hyperbola through 12 points	1	
	(c)		$(1 < x \leqslant 1.2, 10.6 \leqslant y < 11)$	1ft	ft to same accuracy intersections of their two
			$(2.6 \leqslant x < 3, 4.2 \leqslant y \leqslant 4.5)$	1ft	graphs

8)

7	(a)	(i)	−3, −6, 9, 6, 2	2	**B1** for 4 correct
		(ii)	Graph	**P3ft**	**P2ft** for 8 or 9 points correct
					P1ft for 6 or 7 points correct
				C1	Correct curve and not crossing axis
		(iii)	−3.7 to −3.5	**1ft**	ft their curve
	(b)	(i)	−3, 9	1, 1	
		(ii)	Ruled continuous line $y = 2x + 3$	1	Line long enough to intersect both parts
		(iii)	(2.2 to 2.5, 7.5 to 7.8)	**1ft**	ft their line intersection with the curves
			(−4.0 to −3.7, −4.8 to −4.5)	**1ft**	