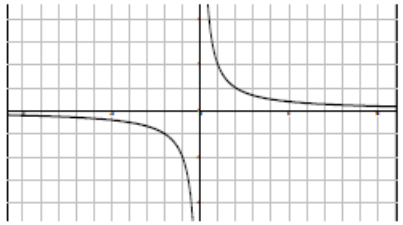
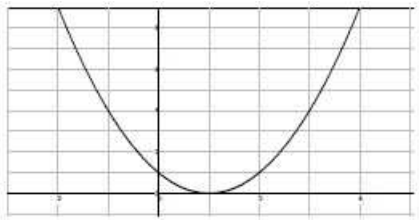
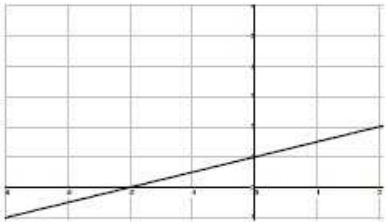
Question	Answer	Marks	AO Element	Notes	Guidance
1(a)	−1.25, 1.25 oe	**2**		**B1** for each	
1(b)	Correct curve	**4**		**B3FT** for 9 or 10 correctly plotted points or **B2FT** for 7 or 8 correctly plotted points or **B1FT** for 5 or 6 correctly plotted points	
2(a)	−2 … −4 … −12 12 … 4 … 2	**3**		**B2** for 4 or 5 correct **B1** for 2 or 3 correct	
2(b)	Correct curve	**4**		**B3FT** for 9 or 10 points plotted correctly **B2FT** for 7 or 8 points plotted correctly **B1FT** for 5 or 6 points plotted correctly	
2(c)	Correct ruled line drawn	**1**			
2(d)	2.4	**1**		**FT** *their* graph and $y = 5$	
3(a)	1.5 4 −4 −1.2	**3**		**B2** for 3 correct or **B1** for 1 or 2 correct	

Question	Answer	Marks	AO Element	Notes	Guidance
3(b)	Correct graph drawn	**4**		**B3FT** for 12 or 11 correct plots **B2FT** for 10 or 9 correct plots **B1FT** for 8, 7 or 6 correct plots	
3(c)	2	**1**			
3(d)	$y = x$ oe $y = -x$ oe	**2**		**B1** for each	
3(e)	Correct ruled line	**1**			
3(f)	−2.4	**1**		**FT** *their* graph and $y = 2.5$	
4(a)	2	**1**			
4(b)(i)	e.g. $4 = \frac{k}{2}$ leading to $k = 8$	**1**		accept use of any correct coordinates	
4(b)(ii)	0.032 oe	**1**			
4(c)(i)	−1, −2, −4, −8	**2**		**B1** for 2 correct	

Question	Answer	Marks	AO Element	Notes	Guidance
4(c)(ii)	Correct curve	**3**		**B2FT** for 3 or 4 correct plots **B1FT** for 1 or 2 correct plots	
4(d)	$y = x$ oe $y = -x$ oe	**2**		**B1** for each	
5(a)	−6 2 14 14 2 −6	**3**		**B2** for 4 or 5 correct **B1** for 2 or 3 correct	
5(b)	Completely correct curve	**4**		**B3FT** for 9 or 10 correctly plotted points **B2FT** for 7 or 8 correctly plotted points **B1FT** for 5 or 6 correctly plotted points	
5(c)(i)	$x = -0.5$ oe	**1**			
5(c)(ii)	$(-0.5, k)$ oe where $14 < k \leqslant 14.8$	**1**			
5(d)	3.3 to 3.7, −4 .7 to −4.3	**2**		**B1FT** for each	
6(a)	−3 5 2	**2**		**B1** for 2 correct	

Question	Answer	Marks	AO Element	Notes	Guidance
6(b)	Correct curve	**4**		**B3FT** for 6 or 7 points correct or **B2FT** for 4 or 5 points correct or **B1FT** for 2 or 3 points correct	
6(c)(i)	Ruled line $x = 1$ drawn	**1**			
6(c)(ii)	$x = 1$	**1**			
6(d)	−0.5 to −0.3 and 2.3 to 2.5	**2**		**B1** for each If 0 scored, **B1** for $y = 4$ drawn	
6(e)(i)	Correct ruled continuous line	**1**			
6(e)(ii)	$[y =] 2x + 4$	**3**		**B2** for $[y =] 2x + k$ or **M1** for $\frac{\text{rise}}{\text{run}}$ **B1** for $kx + 4$, $k \neq 0$, or $c = 4$	
7	$[y =] 5x - 4$	**1**			

Question	Answer	Marks	AO Element	Notes	Guidance
8	Correct sketch 	**2**		**B1** for one correct branch or attempt at correct shape	
9	**M2** for line $y = x + 3$ ruled **A1** for −0.7 to −0.8 and 2.7 to 2.8	**3**		**B1** for $[y =]x + 3$ identified or rules $y = x + k$ or $y = px + 3$	
10(a)	$(x + 5)^2 - 11$	**2**		**M1** for $(x + 5)^2 + k$ or $(x + \textit{their } 5)^2 + 14 - (\textit{their } 5)^2$ or $a = 5$	
10(b)	Sketch of U-shaped parabola with a minimum indicated at (–5, –11) with no part of graph in 4th quadrant	**3**		**FT** *their* $(x + 5)^2 - 11$ provided in that form **B1** for U shape curve **B1FT** for turning point at $(-5, k)$ or $(k, -11)$	

Question	Answer	Marks	AO Element	Notes	Guidance
11(a)	Correct sketch 	**2**		**B2** for correct quadratic curve with min touching x-axis or **B1** for parabola vertex downwards	
11(b)	Correct sketch 	**2**		**B2** for correct straight line intersecting curve on y-axis or **B1** for straight line with positive gradient and positive y-intercept	
					[Total: 77]