1)

11 (i)	$2(x-2)^2-3$	B1B1	B1 for –2, B1 for –3
(ii)	$x \geq 2$ or equivalent	√B1	√ on their '–2'
(b) (i)	$g(x) \geq 4$, $h^{-1}(x) \geq 0$	B1B1	B1 for each
(ii)	Correct sketch	B1 B1 B1	B1 for g(x) B1 for $g^{-1}(x)$ B1 for idea of symmetry
(iii)	$g(4x-25)=85$	M1	M1 for correct order
	$(4x-25)^2+4=85$	DM1	DM1 for attempt to solve
	$x=\frac{17}{2}, x=4$	A1	A1 for both
	Discarding $x=4$	B1 [12]	B1 for discarding $x=4$

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2)

(b) (i)	Method for inverse	M1	
	$\sqrt{x+7}-3$	A1	
(ii)	g(0) = 2	B1	
	Solves $g^{-1}(x) = 2$ or solves x = g(g(0)) = g(2)	M1	
	18	A1	[11]

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3)

7 (i)	f ⩾ –3	B1 [1]	
(ii)	$f^{-1}=\frac{\sqrt{x+3}-1}{2}$	M1 M1 A1 [3]	M1 for correct order of operations M1 for 'interchange' of x and y
(iii)	$\left(2\left(\frac{3}{1+x}\right)+1\right)^2-3=13$	M1	M1 for correct order
	$\left(\frac{7+x}{1+x}\right)^2=16$	A1 M1	A1 for correct simplification M1 for solution
	$x=1$	B1 [4]	B1 for **one** solution only

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4)

7	(i)	Idea of modulus correct	M1	
		Shape and position completely correct	A1	
		(0, 9) (–3, 0) indicated on graph	A1	
	(ii)	Straight line with +ve gradient and +ve y intercept, correct position	B1	
	(iii)	$3x + 9 = x + 6 \Rightarrow x = -1.5$	B1	
		Solve $-(3x + 9) = (x + 6)$ or $(3x + 9)^2 = (x + 6)^2$	M1	
		$x = -3.75$	A1	[7]

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5)

3	Understands modulus	M1	
	Curve from $x < 2$ to $x > 6$	A1	
	Cusp	A1	
	Position correct	A1	
			4

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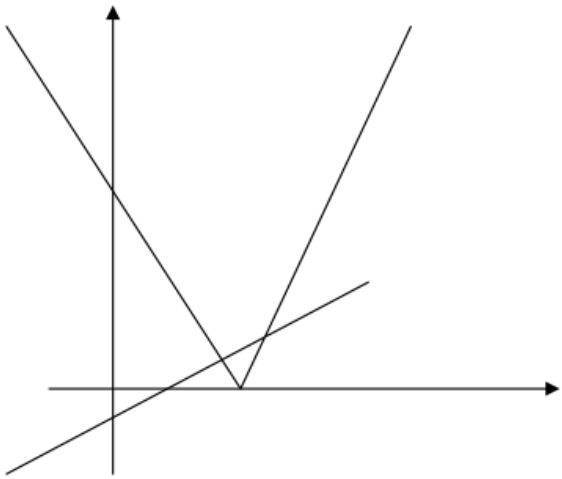
6)

4



(i)	straight line, +ve gradient, – ve intercept	B1	
	idea of modulus (V shape on axis)	B1	
	meets axes in correct places	DB1	
(ii)	6	B1	
	4	B1	[5]

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