9	**(a)**		$(2x + 3 - 1)^2$ or $(2x + 3)^2 - 2(2x + 3) + 1$ seen	**M1**	**1.1**	substitution	
			simplified to eg $4(x + 1)^2$ or $4x^2 + 8x + 4$ or $(2x + 2)^2$	**A1**	**1.1**	mark the final answer	ignore superfluous work on eg finding roots
			domain is $-1 < x < 0$	**B1**	**1.1**	from $2x + 3 > 1$	
				[3]			
9	**(b)**		$0 < gf(x) < 4$	**B1**	**1.1**		
				[1]			

Question			Answer	Marks	AOs		Guidance
9	(c)		factorise their gf(x) to obtain perfect square or complete the square	**M1**	**3.1a**	allow eg $2(x + 1)(2x + 2)$; may follow slip eg dividing by 4	or $g^{-1}(x) = \sqrt{x} + 1$ or $f^{-1}(x) = ½(x – 3)$ for **M1**
			$y = 4(x + 1)^2$ or $(2x + 2)^2$ oe	**A1**	**2.1**	FT	**A1** for both correct
			$(x + 1) = (\pm)\sqrt{\frac{y}{4}}$ oe	**M1**	**1.1**		**M1** for their f^{-1}(their $\sqrt{x} + 1$)
			$[(gf)^{-1}(x) =] \sqrt{\frac{x}{4}} – 1$ or $\frac{\sqrt{x}}{2} – 1$ oe	**A1**	**1.1**		**A1** for $(gf)^{-1}(x) = \sqrt{\frac{x}{4}} – 1$ or $\frac{\sqrt{x}}{2} – 1$ oe
			domain is $0 < x < 4$	**B1** **[5]**	**1.1**	FT their **(b)**	x and y may be interchanged for the first 3 marks but not for the final **A1**