Question			Answer	Marks	AOs	Guidance	
4	**(i)**		$4\left[x^2 - 3x\right] + 11$			No marks until attempt to complete the square	
			$4\left[\left(x - \dfrac{3}{2}\right)^2 - \dfrac{9}{4}\right] + 11 \qquad a = 4$	**B1**	**1.1**	Must be of the form $4\left(x \pm \alpha\right)^2 \pm ...$	
			$\qquad\qquad\qquad\qquad\qquad (x - 3/2)^2$	**B1**	**1.1**		
			$4\left(x - \dfrac{3}{2}\right)^2 + 2 \qquad c = 2$	**B1**	**1.1**		
				[3]			
	(ii)		No real roots	**B1**	**2.2a**	Zero, none, 0, … if not 'no real roots' must be consistent with their **(i)**	
				[1]			
	(iii)		$r = 0 \Rightarrow 1$ real root or 1 repeated root	**M1**	**2.4**	Attempt to relate the value of r to the number of real roots (this can be implied with at least one correct statement)	
			$r < 0 \Rightarrow 2$ real roots				
			$r > 0 \Rightarrow$ no real roots	**A1**	**2.4**	All three statements correct	
				[2]			