Question			Answer	Marks	AO	Guidance	
1			**DR** $$x = \frac{24}{3-\sqrt{5}} = \frac{24\left(3+\sqrt{5}\right)}{\left(3-\sqrt{5}\right)\left(3+\sqrt{5}\right)}$$	**M1**	1.1	Multiplying numerator and denominator by $3+\sqrt{5}$ or $-3-\sqrt{5}$	**Alternative: M1** Correct method to solve simultaneous equations formed from equating expressions to $a+b\sqrt{5}$
			$$= \frac{24\left(3+\sqrt{5}\right)}{9-3\sqrt{5}+3\sqrt{5}-5} = \frac{24\left(3+\sqrt{5}\right)}{4}$$	**A1**	1.1	Correct simplified denominator	**A1** Either a or b correct
			$$= 18+6\sqrt{5}$$	**A1**	1.1	Final answer **cao** , therefore final answer of only $6\left(3+\sqrt{5}\right)$ is **A0**	**A1** Both correct
				[3]			
2	(a)		$5\left[x^2-4x\right]+3$			No marks until attempt to complete the square	
			$= 5\left[\left(x-2\right)^2-4\right]+3 \qquad\qquad p=5$	**B1**	1.1	Must be of the form $5\left(x\pm\alpha\right)^2\pm\cdots$	
			$\left(x-2\right)^2$	**B1**	1.1		
			$= 5\left(x-2\right)^2-17 \qquad\qquad r=-17$	**B1**	1.1		
				[3]			
2	(b)		Minimum point $\left(2,-17\right)$	**B1ft** **B1ft**	1.1 1.1	Follow through their $-q$ Follow through their r	Or by differentiation
				[2]			
2	(c)		$x=2$	**B1ft**	1.1	Follow through their x coordinate in part (b)	
				[1]			