Question	Answer	Marks	AO	Guidance
21	**DR**			
	$\frac{du}{dx} = 2x + 5$ **oe**	**B1**	**2.1**	
	$\int \frac{(6x+15)(x^2+5x)}{\sqrt{x^2+5x-3}} dx = \int f(u) du$	**M1***	**3.1a**	start to eliminate x; must deal with three of the four parts; allow one coefficient error; may see $\int \frac{3(2x+5)(u+3)}{\sqrt{u}(2x+5)} du$
	$\int \frac{3(u+3)}{\sqrt{u}} du$ **oe**	**A1**	**1.1**	must see du here or in previous line
	$\int \left(3u^{\frac{1}{2}} + 9u^{-\frac{1}{2}}\right) du$ **or** $\int \left(3\sqrt{u} + \frac{9}{\sqrt{u}}\right) du$	**M1dep***	**3.1a**	must be two terms; might see the 3 factorised out
	$= 2u^{\frac{3}{2}} + 18u^{\frac{1}{2}} [+k]$ **oe**	**A1**	**1.1**	both terms correct
	$2(x^2 + 5x - 3)^{\frac{3}{2}} + 18(x^2 + 5x - 3)^{\frac{1}{2}} + k$	**M1dep***	**1.1**	must see + arbitrary constant here or in previous line; may be awarded after factorising expression in u; dependent on both previous **M** marks
	$2(x + 2)(x + 3)(x^2 + 5x - 3)^{\frac{1}{2}} + k$	**A1**	**3.2a**	not from wrong working; accept + c throughout for full credit
	alternative method after B1M1A1			
	$6u^{\frac{1}{2}}(u + 3) - \int 6u^{\frac{1}{2}} du$	**M1dep***	**3.1a**	from integration by parts correct for their $\int f(u) du$
	$= 6u^{\frac{1}{2}}(u + 3) - 4u^{\frac{3}{2}} [+k]$	**A1**	**1.1**	both terms correct
	$= 6(x^2 + 5x - 3)^{\frac{1}{2}}(x^2 + 5x - 3 + 3) - 4(x^2 + 5x - 3)^{\frac{3}{2}} + k$	**M1dep***	**1.1**	must see + arbitrary constant here or in previous line; may be awarded after factorising expression in u; dependent on both previous **M** marks
	$2(x + 2)(x + 3)(x^2 + 5x - 3)^{\frac{1}{2}} + k$	**A1**	**3.2a**	not from wrong working; accept + c throughout for full credit
		[7]		