Question			Answer	Mark	AO	Guidance
8			**DR** $[y =]x^2 + 3x(+c)$	**M1***	**3.1a**	Attempt to integrate $\frac{dy}{dx}$ (allow without $+c$). Both powers must increase by 1 and the coefficient of x^2 must not be 2.
			$a = 10 + c$ **and** $2a = 18 + c$	**M1**	**1.1**	oe Substitute $(2, a)$ **and** $(3, 2a)$ into their equation of curve to obtain two equations in a and c (must now have $+c$)
			$[a = 8] \Rightarrow c = -2$	**A1**	**1.1**	
			Alternative method for 1st three marks (using the property of a parabola that the gradient of a chord between any two points equals the gradient at the point with mean x-coordinate). Gradient at $x = 2.5$ is $\frac{2a-a}{3-2} = a = 2 \times 2.5 +$ 3 $[a = 8]$, hence $[y =]x^2 + 3x(+c)$	**M1***		Using the gradient property to obtain a quadratic expression M1 for one term correct (allow without $+c$)
			$8 = 2^2 + 3 \times 2 + c$	**M1**		Setting equal to their value of a
			$c = -2$	**A1**		Solving to obtain c
			$x^2 + 3x - 2 = 4x + 4$	**M1** dep*	**3.1a**	Setting their integrated expression for the curve $= 4x + 4$ with their value for c (must have a value for c here)
			$[\Rightarrow x^2 - x - 6 = 0] \Rightarrow (x + 2)(x - 3) = 0$	**B1FT** dep**	**1.1**	Correct method to solve their quadratic equation (FT their quadratic) – method e.g. factorising/formula/completing square must be seen for this mark.
			$x = -2$ **and** $x = 3$	**A1**	**1.1**	For both values of x correct.
			$(-2, -4)$ **and** $(3, 16)$	**A1** [7]	**3.2a**	Must be written as coordinates or clearly in pairs