Question number	Scheme	Marks
4 (a)	$\dfrac{dy}{dx} = 3x^2 - 6x - 24$	M1
	$"(x+2)(x-4)" = 0$	M1
	$x = -2$ or $x = 4$	A1
	$(-2, 34)$ and $(4, -74)$	A1 (4)
(b)	$\dfrac{d^2 y}{dx^2} = "6x - 6"$ and substitution of their –2 or 4 or consider values of $\dfrac{dy}{dx}$ either side of their –2 or 4 or use properties of a cubic*	M1
	$(-2, 34)$ maximum and $(4, -74)$ minimum	A1cso (2) **[6]**

Part	Mark	Additional Guidance
(a)	M1	General guidance – an attempt to differentiate, power of at least one term must decrease by one. Also, no power must increase.
	M1	Equates their derivative = 0 and attempts to solve by any method – **see general guidance.**
	A1	Both correct values for x
	A1	All values correct, listed as coordinates or correctly paired $x = ... \; y = ...$
(b)	M1	**Correctly differentiates their derivative** from part a and substitutes one of their x values. Allow sight of 18 or -18 following a correct differentiation to imply this mark.
	A1 cso	Allow this mark if there is an incorrect y value from part a Must correctly make the argument they've chosen and identify the points as shown. If substituting $x = -2$ and $x = 4$ or values either side of the these, their evaluations of the substitutions must be correct. * A convincing argument about the shape of a positive cubic curve and position of the minimum and maximum point must be made. Send to review, if in doubt. In the conclusion, it must be clearly stated which coordinate or value of x is a maximum and which is a minimum. Just a substitution of a value and stated max or min is insufficient.