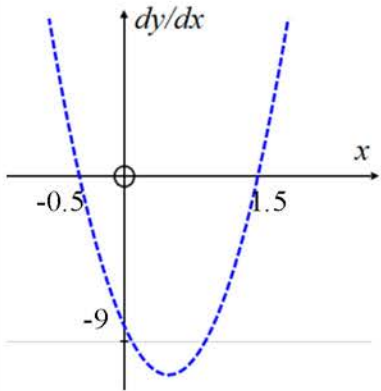


Question	Answer	Marks	AOs	Guidance
7 (a)	$\frac{dy}{dx} = 12x^2 - 12x - 9$ <p>When $\frac{dy}{dx} = 12x^2 - 12x - 9 = 0$</p> $3(2x+1)(2x-3) = 0 \text{ so } x = -0.5, 1.5$ 	<p>M1</p> <p>M1 (dep)</p> <p>A1</p> <p>B1</p> <p>[4]</p>	<p>1.1a</p> <p>1.1a</p> <p>1.1a</p> <p>1.1</p>	<p>DR</p> <p>Attempt to differentiate seen</p> <p>Attempt to solve their $\frac{dy}{dx} = 0$</p> <p>Both values seen – may be indicated on the graph</p> <p>Correct shape through $(0, -9)$</p> <p>SC For cubic graph of the function drawn with M0M0A0 allow SC1 for correct shape with minimum when $x = 1.5$, and maximum when $x = -0.5$</p>
7 (b)	<p>Min point of gradient function when</p> $\frac{d^2y}{dx^2} = 24x - 12 = 0 \text{ so } x = \frac{1}{2}$ <p>Gradient is decreasing for $\left\{ x : x < \frac{1}{2} \right\}$</p>	<p>M1</p> <p>A1</p> <p>[2]</p>	<p>3.1a</p> <p>2.5</p>	<p>DR</p> <p>Attempt to find the vertex (including completing the square or symmetry argument)</p> <p>Inequality correctly formed and expressed as a set.</p> <p>Allow either $<$ or \leq</p>