5	**(a)**		**DR** $\frac{dy}{dx} = 3x^2 - 6x + 4 = 0$ $b^2 - 4ac = -12$ or D$=-12$ or $3(x-1)^2 + 1 = 0$ oe No (real) roots or no value of x, or can't $\sqrt{\text{negative}}$ or gradient always +ve.	**M1** **A1** **[2]**	**3.1a** **1.1**	Differentiate & equate to 0. May be implied by calc of D or $x = \frac{6 \pm \sqrt{36-48}}{6}$ or $x = \frac{6 \pm i\sqrt{12}}{6}$ oe Must see justification as line above, no errors, & statement Other correct forms of the quadratic equation and justification may be seen.
	(b)		**DR** $\frac{d^2y}{dx^2} = 6x - 6 = 0$ $x = 1$ gives a point of inflection or $x = 1$ & show that, either side of this point, gradient does not change sign or second derivative does change sign	**M1** **A1** **[2]**	**1.1** **2.2a**	Differentiate their $\frac{dy}{dx}$ and = 0. Can be implied by $x = 1$ Statement "$x = 1$ gives a point of inflection" is enough. or This equation has one root. (so curve has one inflection) Not just "$x = 1$" Ignore y-coordinate