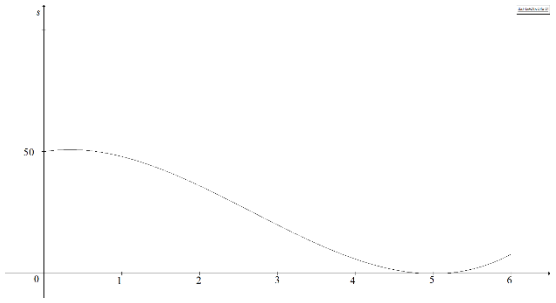
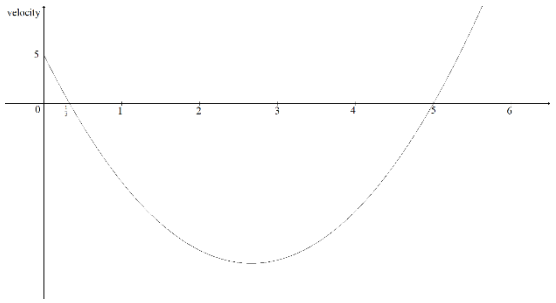
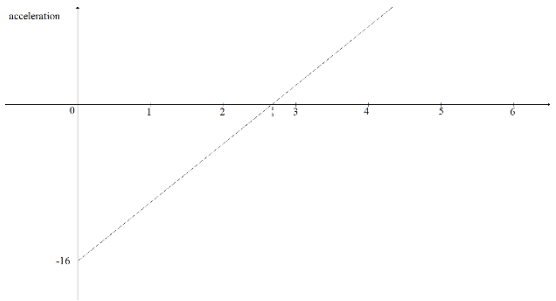
Question	Answer	Marks	Guidance
11(a)	$\frac{ds}{dt} = 3t^2 - 16t + 5$ oe	**2**	**M1** for attempt at differentiation of a product or expansion and differentiation with at least two out of three terms of *their* expansion differentiated correctly **A1** all correct, allow factorised
	$t = \frac{1}{3},\ t = 5$	**2**	**Dep M1** for attempt to solve *their* $\frac{ds}{dt} = 0$, must be in quadratic form **A1** for both
11(b)		**2**	**B1** for a correct curve in the first quadrant only. There must be an indication of a max point in the correct position and a min point at $(5,\ 0)$ **B1** for $(0,\ 50)$ provided basic curve shape is correct
11(c)		**2**	**B1** for a quadratic curve in the first and fourth quadrants **B1** for $(0,\ 5)$, $\left(\frac{1}{3},\ 0\right)$ or $(0.333,\ 0)$ marked and passing through $(5,\ 0)$ on the *x*-axis
11(d)(i)	Acceleration = $6t - 16$	**B1**	
11(d)(ii)		**2**	**B1** for a straight line with a positive gradient in the first and fourth quadrants, meeting the vertical axis **Dep B1** for $\left(\frac{8}{3},\ 0\right)$ or $(2.67,\ 0)$ and $(0,-16)$