

Question		Scheme	Marks	AOs
2(a)		Differentiate $x$ wrt $t$	M1	3.1a
		$(v=)12t^2 - 42t + 36$	A1	1.1b
			(2)	
(b)		$12t^2 - 42t + 36 = 0$	M1	3.1a
		$t = (1.5)$ or 2	A1	1.1b
		$x = 4 \times 2^3 - 21 \times 2^2 + 36 \times 2 + 1$	M1	1.1b
		21 (m)	A1	1.1b
			(4)	
(c)		Differentiate $v$ wrt $t$	M1	3.1a
		$(a=)24t - 42$	A1	1.1b
			(2)	
(8 marks)				
Notes:				
(a)	M1	Differentiate $x$ , with at least 2 powers decreasing by 1		
	A1	Correct expression		
(b)	M1	Equate their $v$ to 0 (Must have attempted to differentiate $x$ to find $v$ and be solving a 3 term quadratic)		
	A1	cao		
	M1	Use the larger of their $t$ -values in the given $x$ expression		
	A1	cao		
(c)	M1	Differentiate their $v$ , with at least 1 power decreasing by 1		
	A1	cao		