Question			Answer	Marks	AOs		Guidance
9			$v = \int (0.8t + 0.5)\,\mathrm{d}t = 0.4t^2 + 0.5t + c$	M1	3.1b	Attempt to integrate, condone omission of +c	
			When $t = 0, \quad v = 3$ $3 = 0.4 \times 0^2 + 0.5 \times 0 + c$	M1	3.1b	Attempt to evaluate c	
			So $v = 0.4t^2 + 0.5t + 3$	A1	1.1	Any form	
			Particle stationary when $v = 0$ $0.4t^2 + 0.5t + 3 = 0$	M1	3.1b	Forming an equation using their $v = 0$	
			discriminant $0.5^5 - 4 \times 0.4 \times 3 = -4.55 < 0$	M1	3.1a	Use of discriminant or completing the square, showing equation has complex roots or stating that the equation has no real roots	Allow this M mark for solving their equation if it has real solutions
			So the velocity is never zero and the particle never stationary.	E1 [6]	2.2a	Clear conclusion in context consistent with their working. FT their v. Dependent on at least 1 method mark.	Ignore any reference to $t < 0$ but do not allow stationary at $t = 0$
			OR $v = \int (0.8t + 0.5)\,\mathrm{d}t = 0.4t^2 + 0.5t + c$	M1		Attempt to integrate, condone omission of +c	
			When $t = 0, \quad v = 3$ $3 = 0.4 \times 0^2 + 0.5 \times 0 + c$	M1 A1		Attempt to evaluate c	
			So $v = 0.4t^2 + 0.5t + 3$	M1		Uses the positivity of t to establish the positivity of v.	
			Clearly v is always positive therefore never sationary	M1 E1		Argues that v is always positive Clear conclusion in context consistent with their working. FT their v. Dependent on at least 1 method mark.	

Question	Answer	Marks	AOs		Guidance
	OR	**M1**		Attempt to construct an argument based on the positivity of v.	
	for $t > 0 \quad a = 0.8t + 0.5 > 0$	**M1**		Uses the positivity of t aiming to establish the positivity of a	
		A1		Clear argument that $a > 0$	
	So v is an increasing function	**M1**		Uses the link between $a > 0$ and v	
	When $t = 0, v = 3 > 0$ $v[> 3] > 0$ for all values of t	**M1**		Uses $v_0 = 3$ explicitly in their argument	
	So the velocity is never zero and the particle never stationary.	**E1** **[6]**		Convincing complete argument.	