Question	Scheme	Marks	AOs
2(a)	Differentiate v w.r.t. t	M1	3.1a
	$a = \dfrac{\mathrm{d}v}{\mathrm{d}t} = 10 - 2t$ isw	A1	1.1b
		(2)	
2(b)	Solve problem using $v = 0$ when $t = 6$	M1	3.1a
	$0 = 10t - t^2 - 24$	A1	1.1b
	Solve quadratic oe to find other value of t	M1	1.1b
	$t = 4$	A1	1.1b
		(4)	
2(c)	Integrate v or $-v$ w.r.t. t	M1	3.1a
	$5t^2 - \dfrac{1}{3}t^3 - 24t$	A1	1.1b
	Total distance $= -\left[5t^2 - \dfrac{1}{3}t^3 - 24t \right]_0^4 + \left[5t^2 - \dfrac{1}{3}t^3 - 24t \right]_4^6$	M1	2.1
	$\dfrac{116}{3}$ (m)	A1	1.1b
		(4)	
		(10 marks)	

Notes:

2a	M1	Differentiate, with both powers decreasing by 1
	A1	Correct expression
2b	M1	Put $t = 6$ **OR** use $(t-6)(t-x) = t^2 - 10t + k$ oe
	A1	Correct expression (unsimplified) for v **OR** $v = (t-6)(t-4)$
	M1	Put $v = 0$ to give quadratic in t and solve for other value of t
	A1	$t = 4$
2c	M1	Integrate, with at least two powers increasing by 1 (allow if only two terms integrated)
	A1	Correct expression
	M1	Complete method to find the total distance
	A1	Accept 39(m) or better