Question	Scheme	Marks	AOs
2(a)	Differentiate $2t-7\sqrt{t}+6$ wrt t	M1	3.1a
	$2-\frac{7}{2\sqrt{t}}$ oe	A1	1.1b
	When $t=4$, $a=0.25(\text{m s}^{-2})$	A1	1.1b
		(3)	
(b)	Integrate $2t-7\sqrt{t}+6$ wrt t	M1	3.1a
	$t^2-\frac{14}{3}t^{\frac{3}{2}}+6t(+C)$	A1	1.1b
	Use the limits to find XY	DM1	1.1b
	$(XY=)$ $\frac{1}{3}\left(41-28\sqrt{2}\right)$ (metres) *	A1*	1.1b
		(4)	
			(7 marks)

Notes:

(a)	
M1	Both powers of t decreasing by 1
A1	Any equivalent form
A1	Any equivalent form
(b)	
M1	At least two powers of t increasing by 1
A1	Correct integration (accept without constant of integration and unsimplified)
DM1	Correct use of 'limits', seen or implied. $\left(2^2-\frac{14}{3}\times 2^{\frac{3}{2}}+6\times 2(+C)\right)-\left(1^2-\frac{14}{3}\times 1^{\frac{3}{2}}+6\times 1(+C)\right)$ Condone missing second pair of brackets for this mark **N.B.** Allow the subtraction the other way round and the use of decimals.
A1*	$=\frac{(48-28\sqrt{2})}{3}-\frac{7}{3}=\frac{(41-28\sqrt{2})}{3}$ * Obtain given answer from correct working including correct use of brackets, with at least one more line of working, including a term in $\sqrt{2}$. Not available if they use decimals.