Question Number	Scheme	Marks
1(a)	$\frac{2\pi}{\omega}=\frac{1}{2} \Rightarrow \omega=...$	M1
	$\omega = 4\pi$	A1
	$v = "\omega" \times 0.3$	M1
	$v = 1.2\pi$, 3.8 or better (m s^{-1})	A1
		(4)
(b)	$x = a\sin\omega t \Rightarrow 0.15 = 0.3\sin 4\pi t \Rightarrow t = ...$	M1
	$t = \frac{1}{4\pi}\times\frac{\pi}{6}=\frac{1}{24}$ (s) $0.04166... = 0.042$ or better	A1
		(2) **[6]**

	Notes
(a)	
M1	Use period = 1/frequency to find a value for ω . Must be correct way up.
A1	Correct value for ω
M1	Use of $v = a\omega$ or $v^2 = \omega^2(a^2 - x^2)$ with x=0 .
A1	cao
(b)	
M1	Use $0.15 = a\sin\omega t$ to obtain a value for t . Use *their* a and ω.
A1	Correct value, 0.042 or better
ALT 1(b)	**Using cos**
	Complete method using $x = a\cos\omega t$ AND $\frac{T}{4}$ to obtain a value for t
MI	$x = a\cos\omega t \Rightarrow 0.15 = 0.3\cos 4\pi t \Rightarrow t = ...$
	$\frac{T}{4} - t = \frac{0.5}{4} - t = ...$
A1	Correct value, 0.042 or better