Question number	Answer		Mark
12	• Calculate period = 60 s / 600 = 0.10 s **or** calculate f = 600 / 60 s = 10 Hz	1	(5)
	• Use of $\omega = 2\pi / T$ **or** $v = 2\pi r / T$ **or** $\omega = 2\pi f$ **or** $v = 2\pi f r / T$	1	
	• Use of $F = m\omega^2 r$ **or** $F = mv^2/r$	1	
	• Add weight to identified centripetal force	1	
	• Answer = 11.5 N	1	
	Example of equation period = 60 s / 600 = 0.10 s $v = 2\pi \times 0.24$ m / 0.10 s = 15.1 m s^{-1} $F = 0.012$ kg $\times$ (15.1 m s^{-1})^2 / 0.24 m = 11.37 N $W = mg = 0.012$ kg $\times$ 9.81 m s^{-2} = 0.12 N Maximum normal contact force = 11.37 N + 0.12 N = 11.49 N		
	Total for Question 12		**5**