Question Number	Scheme	Marks
1	$\omega = \dfrac{2\pi}{0.5}\left(= 4\pi\right)$	B1
	$R = m\omega^2 \times 0.35 \quad \left(= \dfrac{28m\pi^2}{5}\right)$	M1
	$F_r = mg$	B1
	$F_r \leq \mu R$	M1
	$mg \leq \mu \dfrac{28m\pi^2}{5}$	DM1
	$\mu \geq 0.18 \quad \left(\mu \geq 0.177\right)$	A1
		[6]

B1 Use of period to find ω.

M1 Equation of motion horizontally. Must be considering *R*. Acceleration can be in either circular motion form.

B1 Resolve vertically. If only seen within friction inequality, then must be correct way round.

M1 Use of $F_r \leq \mu R$. Condone use of strict inequality for this mark.

D**M1** Substitute in F_r and R. Could be an equation. Dependent on first M mark.

A1 $\mu \geq 0.18 \quad \left(\mu \geq 0.177\right)$ **cao**

Note: If equation used throughout and correct inequality added for final answer, full marks are available if no incorrect working seen.