Question Number	Scheme	Marks
2a)	$\sin\theta = \frac{3}{5}, \cos\theta = \frac{4}{5}$	
	$T\cos\theta = mg$	M1A1
	$\frac{4}{5}T = mg \rightarrow T = \frac{5mg}{4}$	A1
		(3)
2b)	$r = a + \frac{5a}{4} \times \frac{3}{5} = \frac{7a}{4}$	B1
	$T\sin\theta = m\omega^2\left(\frac{7a}{4}\right)$	M1A1A1
	$\frac{3}{5}\left(\frac{5mag}{4}\right) = \frac{7}{4}ma\omega^2$	DM1
	$\omega = \sqrt{\frac{3g}{7a}}$	A1 **(6)**
		[9]
a)		
M1	Resolving vertically. $T\cos\theta$ or $T\sin\theta$ accepted	
A1	Correct equation	
A1	Correct tension	
b)		
B1	Correct radius of motion seen explicitly or used in N2L	
M1	Attempt at horizontal equation of motion. Allow either form of acceleration. $T\cos\theta$ or $T\sin\theta$ accepted. Allow this mark if $r = \frac{3a}{4}$ used.	
A1	Correct LHS	
A1	Correct RHS. Acceleration must now be in $r\omega^2$ form.	
DM1	Substitute in trig and eliminate T to find value for ω *or* ω^2. Depends on first M mark in (b)	
A1	Correct value for ω. (Square root sign must cover all terms)	