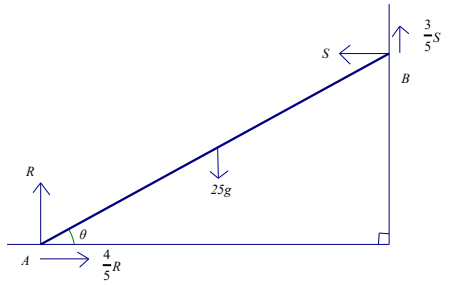
Question	Solution	Marks	Notes
3			
	Use of $F = \mu R$	B1	At least once
	Resolve horizontally	M1	Allow with their horizontal friction
	$S = \frac{4}{5}R \quad (S = F_A)$	A1	Correct unsimplified equation
	Resolve vertically	M1	Allow with their vertical friction
	$\frac{3}{5}S + R = 25g \quad F_B + R = 25g$ $\left(\frac{3}{5}S + \frac{5}{4}S = 25g, \quad S = \frac{500}{37}g\right)$	A1	Correct unsimplified equation
	Moments equation	M1	Any moments equation. Need all terms & dimensionally correct
	M(A): $25g \times 1.5\cos\theta = S \times 3\sin\theta + \frac{3}{5}S \times 3\cos\theta$ $\left(25g\cos\theta - \frac{6}{5}S\cos\theta = 2S\sin\theta\right)$ M(B): $R \times 3\cos\theta = 25g \times 1.5\cos\theta + \frac{4}{5}R \times 3\sin\theta$	A1	Correct unsimplified equation
	M1A1 for first equation, M1A1 for second equation, M1A1 for third equation (i.e. mark in the order in which they appear rather than as listed on the mark scheme). If there are more than 3 equations, mark the 3 used or the best 3 if they go no further. Can also be solved using one resolution and two moments equations. Friction acting in the wrong direction scores A0.		
	$\tan\theta = \left(\frac{25g - \frac{6}{5}S}{2S} = \right)\frac{25 - \frac{600}{37}}{\frac{1000}{37}}$	DM1	Substitute to form equation in $\tan\theta$ only Condone in decimals Dependent on M marks for the equations
	$= \frac{325}{1000}\left(= \frac{13}{40}\right)$	A1	Or exact equivalent (0.325)
		(9)	
SC	It is possible to solve by resolving horizontally or vertically and taking moments about the centre: $1.5\cos\theta \times R = 1.5\cos\theta \times \frac{3}{5}S$ $+1.5\sin\theta \times S + 1.5\sin\theta \times \frac{4}{5}R$		M1A1 for a correct resolution M2A2 for a complete sets of equations to solve
		[9]	