Question Number	Scheme	Marks
5.	Resolve perp to the plane: $R = mg\cos\alpha$	M1A1
	Resolve parallel to the plane:	M1
	$mg\sin\alpha + F = 2P$	A1
	$mg\sin\alpha - F = P$	A1
	Use of $F = \mu R$	M1
	Substitute correctly for trig, eliminate P and F and solve for μ	M1
	$\mu = 0.25$	A1
	N.B. If they consistently omit g and obtain the correct answer, max marks are: M1A0M1A0A0M1M1A1	(8)
		(8)
	Notes for question 5	
	M1 First resolution, correct no. of terms, condone sign errors and sin/cos confusion **N.B.** If they use cos (4/5) etc, treat as an A error but allow recovery.	
	A1 Correct equation	
	M1 Second (or third) resolution, correct no. of terms, condone sign errors and sin/cos confusion **N.B.** M0 if they don't substitute for X, but full marks is possible if they use X and $2X$ oe. If they use sin (3/5) etc, treat as an A error but allow recovery.	
	A1 Correct equation (A0 if they use different R's or F's)	
	A1 Correct equation (A0 if they use different R's or F's)	
	M1 Use of $F = \mu R$	
	M1 Substitute for trig, eliminate P and F and solve for μ	
	A1 cao	
	Other possible equations:	
	$(\rightarrow) 2P\cos\alpha = R\sin\alpha + F\cos\alpha \quad (1)$	
	$(\rightarrow) \quad P\cos\alpha = R\sin\alpha - F\cos\alpha \quad (2)$	
	$(\uparrow) mg - 2P\sin\alpha = R\cos\alpha - F\sin\alpha \quad (3)$	
	$(\uparrow) mg - P\sin\alpha = R\cos\alpha + F\sin\alpha \quad (4)$	
	SC: (Only needs 2 equations)	
	Equation (1): M1A1	
	Equation (2): M1A1	
	(1) + (2): $3P\cos\alpha = 2R\sin\alpha$	
	$(1)-(2)$: $P\cos\alpha = 2F\cos\alpha$	
	Divide $\frac{1}{3} = \frac{F}{R}\cot\alpha$. A1	
	Use of $F = \mu R$ M1	
	Substitute for trig and solve for μ M1	
	$\mu = 0.25$ A1	