Question Number	Scheme	Marks
8(a)	$R = 2g\cos\alpha$ (Could be earned in (b) if used there)	M1A1
	$T - 2g\sin a - F = 2a$	M1A1
	$4g - T = 4a$	M1A1
	OR $4g - 2g\sin a - F = 6a$ (whole system) M1A1	
	$F = 0.25R$ seen anywhere e.g on a diagram or in (b)	B1
	Solve for T	M1
	$T = 2.4g = \frac{12g}{5}$ = 24 or 23.5 (N)	A1 (9)
8(b)	$2.4g - 2g\sin a - 0.4g = 2a$ OR $4g - 2.4g = 4a$	M1
	$a = 0.4g$	A1
	$v^2 = \frac{4gh}{5}$	M1
	$-\frac{6g}{5} - \frac{2g}{5} = 2a'$ (a' is new acceleration of A up the slope) Allow +ve terms on LHS	B1
	$0 = \frac{4gh}{5} - \frac{8g}{5}s$	M1
	$s = \frac{1}{2}h$	A1
	$d > 1.5h$	A1 (7)
8(c)	Weight of string; extensibility of the string; friction at pulley	B1 (1)
	N.B. Simply restating what's in the question is B0.	**(17)**
	Notes for question 8	
8(a)	M1 Resolving perpendicular to the plane, correct no. of terms, condone sign errors and sin/cos confusion	
	A1 Correct equation	
	M1 Equation of motion parallel to the plane, correct no. of terms, condone sign errors and sin/cos confusion	
	A1 Correct equation	
	M1 Equation of motion vertically, correct no. of terms, condone sign errors.	
	A1 Correct equation	
	N.B. Either equation of motion may be replaced by a whole system equation with usual rules.	
	B1 $F = 0.25R$ seen anywhere e.g. on diagram	
	M1 Solve for T (Must have *two* equations of *motion* with a in each)	
	A1 cao	
8(b)	M1 Eliminate T from their equations of motion to give an equation in a **only**. (**N.B**. May be done in (a) but must be used in (b))	