

Q	Marking instructions	AO	Marks	Typical solution
19(a)	Uses $F = ma$ to form a three-term equation modelling object M or N with one side correct	3.3	M1	Model for M $0.6g - T = 0.6a$
	Finds fully correct equation for modelling M or N	1.1b	A1	
	Uses $F = ma$ to form a three-term equation for modelling the other object with one side correct	3.3	M1	Model for N $T - 0.5g = 0.5a$
	Eliminates T to find an equation in terms of a using their three-term equations for M and N	1.1a	M1	So $0.1g = 1.1a$
	Completes reasoned argument to show $a = \frac{1}{11}g$	2.1	R1	$a = \frac{1}{11}g$
	Subtotal		5	

Q	Marking instructions	AO	Marks	Typical solution
19(b)	Uses $v = u + at$ with $a = \frac{1}{11}g$ or AWRT 0.89	3.4	M1	Using $v = u + at$ $v = 0 + \left(\frac{1}{11}g\right)(0.5) = \frac{g}{22}$ $k = 22$
	Obtains $k = 22$ AWRT 22 Accept $v = \frac{g}{22}$ if no value of k stated	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
19(c)	States reasonable assumption Accept M does not reach the floor, the string breaks OE	3.5b	E1	N does not reach the peg.
	Subtotal		1	

	Question 19 Total		8	
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