2a	Change in GPE $= mg \times 1.3l \sin\theta \left(= 0.5lmg\right)$	M1	Condone sin / cos confusion
	$\text{EPE} = \frac{\lambda l^2}{2l}$ **or** $\text{EPE} = \frac{\lambda\left(0.3l\right)^2}{2l}$	B1	One correct term for EPE
	Energy equation B to A	M1	Dimensionally correct with all the required terms. Condone sign errors and sin / cos confusion
	$\frac{\lambda l^2}{2l} - \frac{\lambda\left(0.3l\right)^2}{2l} = 0.5lmg$	A1	Correct unsimplified equation
	$\Rightarrow \lambda = mg\frac{1}{1-0.09} = \frac{100}{91}mg$	A1*	Obtain given answer from correct working. Must see evidence of simplification.
		[5]	
2b	Equation of motion	M1	Dimensionally correct with all the required terms. Condone sign errors and sin/cos confusion.
	$T - mg\sin\theta = ma$	A1	Correct unsimplified equation
	$\frac{\lambda \times l}{l} - mg\sin\theta = ma$ $\left(\frac{100}{91}mg - \frac{5}{13}mg = ma\right)$	A1	Correct unsimplified equation with HL used to replace T
	$a = \frac{5}{7}g$	A1	Accept $0.71g$ or better. If $g = 9.8$ is used, accept 7.
	Note: If $g = 9.81$ is used then penalise once per complete question. SHM equations can only be used if the motion is proven to be SHM first.		
		[4]	
		(9)	