5a	Use of $F_{\max} = \mu R$: $F_{\max} = \frac{2}{7} \times 1.5g\cos\theta$	M1	$(3.87...)$ Condone trig confusion. Trig substitution not required. Allow M1 if there is a clear statement for $F_{\max}$ "correct" and then used in a calculation including the gain in GPE
	Use of $\text{WD} = 2.5F_{\max}$	M1	Trig substitution not required. M0 if they have included the gain in GPE
			If the method for F is incorrect but involves the use of μ to obtain F and then they use the "work done" formula correctly allow M0M1
	$\text{WD} = 9.69 \quad (9.7)\,(\text{J})$	A1	3 sf or 2 sf not $\frac{126}{13}$
		3	
5b	Work-energy equation	M1	The Q asks for work-energy. Need all terms and dimensionally correct. Condone sign errors and sin / cos confusion
	If their answer to (a) included the GPE then it must be used for the total work done here to score the M1		
	$\frac{1}{2} \times 1.5U^2 = WD + 1.5 \times 9.8 \times 2.5 \times \sin\theta$	A1ft A1ft	Unsimplified equation with at most one error. Correct unsimplified equation Follow their WD against friction
	$U = 5.64 \quad (5.6)$	A1	3 sf or 2 sf
		4	
5c	Work-energy equation for A to A	M1	The Q asks for work-energy. Need all terms and dimensionally correct.
	$\frac{1}{2} \times 1.5v^2 = \frac{1}{2} \times 1.5U^2 - 2WD$	A1ft	Correct unsimplified equation. Follow their WD against friction and their U
	$v = 2.43\,(2.4)\,(\text{m s}^{-1})$	A1	3 sf or 2 sf
		3	
5c alt	Work-energy equation for B to A	M1	The Q asks for work-energy. Need all terms and dimensionally correct.
	$\frac{1}{2} \times 1.5v^2 = 1.5 \times 9.8 \times 2.5 \times \sin\theta - WD$	A1ft	Correct unsimplified equation. Follow their WD
	$v = 2.43\,(2.4)\,(\text{m s}^{-1})$	A1	3 sf or 2 sf
		3	
		(10)	