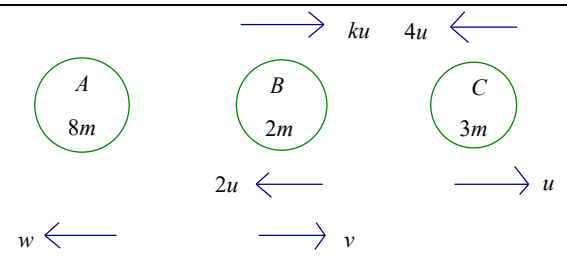
7a			
	Use of CLM	M1	Need all terms. Dimensionally correct. Condone sign errors
	$2mku - 3m \times 4u = -2m \times 2u + 3m \times u$ $(2k - 12 = -4 + 3)$	A1	Correct unsimplified
	$\Rightarrow k = \frac{11}{2}$	M1	Solve for k
	KE lost $= \frac{1}{2}2m\left(k^2 - 4\right)u^2 + \frac{1}{2}3m(16-1)u^2$	M1	Complete expression. Dimensionally correct. Allow $\pm$. In k or their k
	$\left(= mu^2\left(k^2 - 4\right) + \frac{45mu^2}{2}\right)$		
	$= \frac{195mu^2}{4}$, $\lambda = \frac{195}{4}$	A1	Or equivalent (48.75). Accept 49, 48.8 ISW once correct answer seen.
		(5)	
7b	Use of CLM: $4mu = 8mw - 2mv$	M1	Dimensionally correct. Condone incorrect signs.
	Use of impact law:	M1	Used the right way round.
	$v + w = 2eu$	A1	Both equations correct unsimplified. Signs consistent.
	Solve for v or a multiple of v	M1	(v_B)
	$(w = 2eu - v \Rightarrow 10v = 16eu - 4u)$		
	Inequality in e: $10v > 10u \Rightarrow 16eu > 14u$	M1	Complete correct method with signs consistent with the direction of their v Upper limit of 1 not necessary No extra incorrect inequality
	$\Rightarrow \frac{7}{8} < e \leq 1$	A1	Or equivalent. Want both limits. Must be ≤ 1.
			NB: The last two M marks might appear in reverse order. The inequality $v > u$ can be used with an expression for w to form the inequality in e.
		(6)	
		[11]	