

4	PE lost by A : $\pm mg \times 0.75$
	PE gained by B : $\pm 3g \times 0.75 \times 0.6 [= \pm 13.5]$
	KE gained by A and B : $\pm \left(\frac{1}{2} \times 3 \times 2^2 + \frac{1}{2} \times m \times 2^2 \right) [= \pm (6 + 2m)]$
	Work done against resistance = $\pm \frac{10}{3} \times 0.75 [= \pm 2.5]$
	$\frac{1}{2} \times 3 \times 2^2 + \frac{1}{2} \times m \times 2^2 = 0.75mg - 13.5 - 2.5$
	$m = 4$
	Special case for use of N2L max 3 marks
	$2^2 = 0^2 + 2 \times a \times 0.75 \Rightarrow a = \frac{8}{3}$
	$mg - T = ma$ and $T - 3g \times 0.6 - \frac{10}{3} = 3a$ OR $mg - 3g \times 0.6 - \frac{10}{3} = (m + 3)a$
	$m = 4$