

Question Number	Scheme	Marks
7(a)	$\frac{42mg}{5} - (m+M)g = (m+M)\frac{2g}{5} \quad \text{where } M = (p+q)$	M1 A1
	OR : $\frac{42mg}{5} - Mg = M\frac{2g}{5} \quad \text{where } M = p+q+m$	
	$(p+q) = 5m$	dM1 A1
		(4)
7(b)	$\frac{14mg}{5} - pg = p\left(\frac{2g}{5}\right)$	M1 A1
	$p = 2m$	A1
		(3)
(7)		
	NOTES	
	N.B. Use the mass in the 'ma' term to determine which part of the system is being considered.	
(a) M1	Form an equation of motion for the whole system with the combined mass of <i>P</i> and <i>Q</i> . Correct terms, condone sign errors. N.B. They may consider the 2 masses (<i>M</i>) and the lift separately and eliminate the normal reaction e.g. $R - Mg = M\frac{2g}{5} \quad \text{AND} \quad \frac{42mg}{5} - mg - R = m\frac{2g}{5} \quad \text{AND add to}$	
A1	eliminate <i>R</i> Correct equation in <i>M</i> and <i>m</i> for their <i>M</i>	
dM1	N.B. Award marks for a correct equation only if no wrong working seen. Rearrange to find an expression for the combined mass of <i>P</i> and <i>Q</i> . Must be a multiple of <i>m</i>	
A1	Cao	
(b) M1	Form an equation of motion for box <i>P</i> . Correct terms, condone sign errors. Fully correct equation.	
A1	Cao	