

Question	Answer	Marks	Guidance
(a)	Attempt to use Newton's Second law	M1	
	For P : $0.3g \sin 60 - T = 0.3a$ For Q : $T + 0.2g \sin 30 = 0.2a$ System: $0.3g \sin 60 + 0.2g \sin 30 = 0.5a$ $\frac{0.3g \sin 60 - T}{0.3} = \frac{0.2g \sin 30 + T}{0.2}$	A1	For any one equation
		A1	For any second equation
	$0.3g \sin 60 + 0.2g \sin 30 = 0.5a \quad a = \dots$	M1	For solving for a or T
	Magnitude of acceleration = 7.20 ms^{-2} Tension = 0.439 N	A1	
		5	
(b)	$R = 0.2g \cos 30$	B1	
	$[0.3g \sin 60 - T = 0] \quad T = \frac{3\sqrt{3}}{2} \text{ or } T = 2.598\dots$	B1	Equilibrium for P
	$T + 0.2g \sin 30 - F - 3 = 0$	M1	Equilibrium for Q on the point of moving down
	$\frac{3\sqrt{3}}{2} + 0.2g \sin 30 - \mu(0.2g \cos 30) - 3 = 0$	M1	Use of $F = \mu R$
	$\mu = 0.345$	A1	
		5	