Question Number	Scheme	Marks
8(a)	$F = \frac{1}{5}R$ $R = 1.5g$ $T - F = 1.5a$ $3g - T = 3a$ $T = 1.2g$ or 11.8 N or 12 N	M1 B1 M1 A1 M1 A1 **DM1** A1 (8)
(b)	$R = \sqrt{T^2 + T^2}$ or $2T\cos 45^0$ or $\frac{T}{\cos 45^0}$ $= 16.6$ (N) or 17(N) or $\frac{6g\sqrt{2}}{5}$ Direction is 45° below the horizontal oe	M1 A1 A1 B1 (4) **12**
	Notes	
8(a)	First M1 for *use of* $F = \frac{1}{5}R$ in an equation. B1 for $R = 1.5g$ Second M1 for resolving horizontally with usual rules First A1 for a correct equation Third M1 for resolving vertically with usual rules Second A1 for a correct equation **N.B.** Either of the above could be replaced by a *whole system* equation: $3g - F = 4.5a$ **N.B.** All of the marks for the two equations can be scored if they consistently use $-a$ instead of a. Fourth M1 dependent on first, second and third M marks for solving their equations for T Third A1 for 1.2g, 11.8 (N) or 12 (N)	
(b)	First M1 for a complete method for finding the magnitude of the resultant (**N.B.** M0 if different tensions used), First A1 for $\sqrt{T^2 + T^2}$ or $2T\cos 45^o$ Second A1 for 16.6(N) or 17 (N) B1 for 45° below the horizontal or a diagram with an arrow and a correct angle. Ignore subsequent wrong answers e.g. a bearing of 225^0, which scores B0, as does SW etc.	