Question Number	Scheme	Marks
2(a)	M(D), $\frac{3a}{5}Xg = \frac{2a}{5}Mg$ Other possible equations: $(\uparrow) T_D = Mg + Xg$ M(A), $Mga + Xg\,2a = T_D\,\frac{7a}{5}$ M(B), $Mga = T_D\,\frac{3a}{5}$ T_D would then need to be eliminated M(C), $Mg\,\frac{3a}{5} + Xg\,\frac{8a}{5} = T_D a$ M(G), $Xga = T_D\,\frac{2a}{5}$	M1A1
	$X = \frac{2M}{3}$, 0.67 M or better	A1 (3)
2(b)	M(D), $T_C a + \frac{1}{2}Mg\,\frac{3a}{5} = \frac{2a}{5}Mg$ Other possible equations: $(\uparrow) T_C + T_D = Mg + \frac{1}{2}Mg$ M(A), $Mga + \frac{1}{2}Mg\,2a = T_C\,\frac{2a}{5} + T_D\,\frac{7a}{5}$ M(B), $Mga = T_C\,\frac{8a}{5} + T_D\,\frac{3a}{5}$ T_D would need eliminating M(C), $Mg\,\frac{3a}{5} + \frac{1}{2}Mg\,\frac{8a}{5} = T_D a$ M(G), $T_C\,\frac{3a}{5} + \frac{1}{2}Mga = T_D\,\frac{2a}{5}$	M1A1
	$T_C = \frac{1}{10}Mg$ oe	A1 (3)
		(6)
	Notes for question 2	
2(a)	M1 For an equation (or inequality,,,) in X , M and *a only* (allow consistent missing a's) with correct no. of terms. Allow if one g is missing. **N.B.** M0 if Tc appears and never becomes zero	
	A1 Correct equation or inequality	
	A1 cao	
2(b)	M1 For an equation in Tc , M , g and *a only* (allow consistent missing a's or if g('s) missing) with correct no. of terms M0 if they assume that $T_C = T_D$ or if they assume their X value from (a).	
	A1 Correct equation	
	A1 cao	