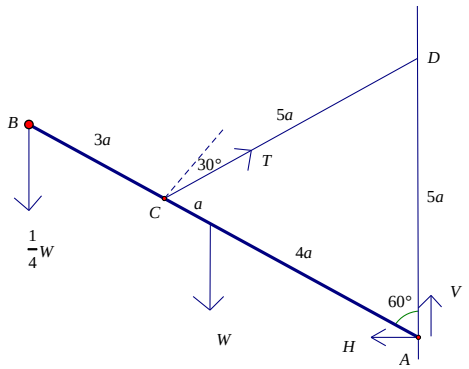
Question	Scheme	Mark	Notes
6a			
	Moments about A: **M0 if there is no resolving**	M1	Need all terms and no extras. Dimensionally consistent. Condone sign errors and sine/cosine confusion.
	$4a\cos 30°\times W+8a\cos 30°\times\frac{W}{4}$ $=5a\cos 30°\times T$	A1	Correct unsimplified equation
	$6W=5T\Rightarrow T=\frac{6}{5}W$ *	A1*	Obtain **given answer** from correct working, e.g. show cancelling of the common factors or some simplification of the moments equation
		[3]	
6b	They need 2 equations. Award M1A1 for the first correct equation seen and M1A1 for the second correct equation. Common alternatives: $M(B)$: $T\cos 30°\times 3a+V\cos 30°\times 8a=W\cos 30°\times 4a+H\cos 60°\times 8a$ $M(C)$: $W\cos 30°\times a+H\cos 60°\times 5a=\frac{1}{4}W\cos 30°\times 3a+V\cos 30°\times 5a$ Perpendicular to rod: $\frac{1}{4}W\cos 30°+W\cos 30°+H\cos 60°=T\cos 30°+V\cos 30°$ Parallel to rod: $\frac{1}{4}W\cos 60°+T\cos 60°+W\cos 60°=V\cos 60°+H\cos 30°$		
	First equation dimensionally correct. Condone sine/cosine confusion and sign errors	M1	e.g. Resolve horizontally
	Correct unsimplified equation	A1	$H=T\cos 30°\quad\left(H=\frac{3\sqrt{3}}{5}W\right)$
	Second equation dimensionally correct. Condone sine/cosine confusion and sign errors	M1	e.g. resolve vertically
	Correct unsimplified equation	A1	$V+T\cos 60°=W+\frac{W}{4}\quad\left(V=\frac{13}{20}W\right)$
	$\lvert R\rvert=\sqrt{V^2+H^2}$ or $\lvert R\rvert^2=V^2+H^2$	DM1	Correct use of Pythagoras Dependent on two preceding M marks.
	$\lvert R\rvert=\frac{W}{20}\sqrt{3\times 144+169}=\frac{\sqrt{601}}{20}W$	A1	$1.2W$ or better (1.22576…)
		[6]	
		(9)	