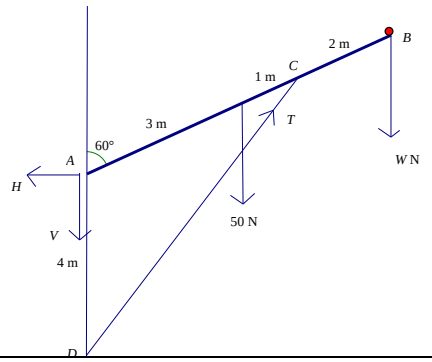
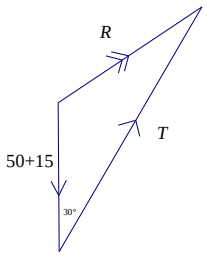
6a			
	M(*A*)	M1	Or equivalent method to form an equation in *W* only. Equation(s) must be dimensionally correct and contain all relevant terms. Condone sin / cos confusion and sign error(s)
	$50\times3\cos30°+W\times6\cos30°=60\sqrt{3}\times4\sin30°$	A1 A1	Unsimplified equation with at most one error. Correct unsimplified equation
	$W=15$ *	A1*	Correct answer only
		4	
6b	First equation e.g. Resolve vertically	M1	Or resolve parallel to pole
	$(\pm)V+50+15=T\cos30°$ $(V=25)$	A1	Or: $P+50\cos60°+15\cos60°=60\sqrt{3}\times\frac{\sqrt{3}}{2}$
	Second equation e.g. Resolve horizontally	M1	Or resolve perpendicular to the pole
	$(\pm)H=T\cos60°\left(=30\sqrt{3}=51.96.....\right)$	A1	Or: $50\cos30°+15\cos30°=60\sqrt{3}\cos60°+Q$
	NB: One of the equations could be a second moments equation		
	$\lvert R\rvert=\sqrt{25^2+\left(30\sqrt{3}\right)^2}$	DM 1	Dependent on the 2 preceding M marks $\left(\sqrt{57.5^2+3\times6.25}\right)$
	$=5\sqrt{133}\left(57.662.....\right)$ (N)	A1	58 N or better
		6	Full marks available using $\pm V,\pm H,\pm P,\pm Q$
6b alt	Form vector triangle for the vertical forces, the thrust and the resultant Correct triangle	M1 A1	
	Use cosine rule	M1	
	$R^2=T^2+\left(50+W\right)^2-2T\left(50+W\right)\cos30°$	A1	Correct unsimplified equation
	$R^2=\left(60\sqrt{3}\right)^2+\left(65\right)^2-2\times60\sqrt{3}\times65\cos30°$	DM 1	Substitute values and solve for $\lvert R\rvert$
	$\lvert R\rvert=5\sqrt{133}\left(57.662.....\right)$ (N)	A1	58 N or better
		6	
		(10)	