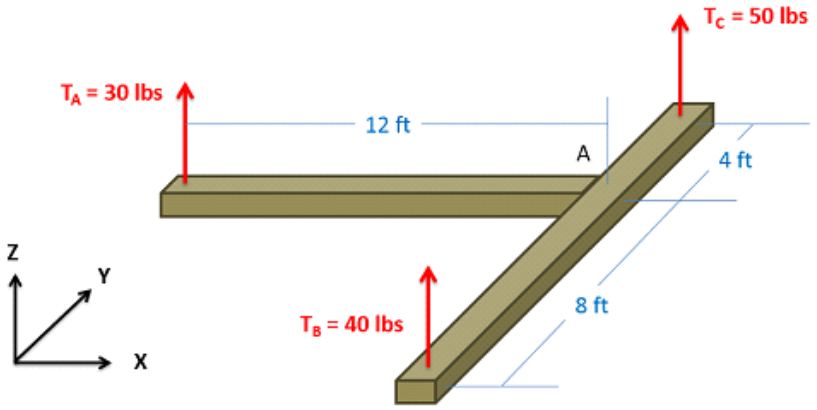
Problem 3

What are the moments that each of the three tension forces exert about point A (the point where the beams come together)?



T_A $\quad M_{TA} = (F)(d) = (30\text{ lbs})(12\text{ ft}) = 360\text{ ft lbs}$

$$M_{TA} = [0, 360, 0]\text{ ft lbs}$$

right hand rule

T_B $\quad M_{TB} = (F)(d) = (40\text{ lbs})(8\text{ ft}) = 320\text{ ft lbs}$

$$M_{TB} = [-320, 0, 0]\text{ ft lbs}$$

right hand rule

T_C $\quad M_{TC} = (F)(d) = (50\text{ lbs})(4\text{ ft}) = 200\text{ ft lbs}$

$$M_{TC} = [200, 0, 0]\text{ ft lbs}$$

right hand rule