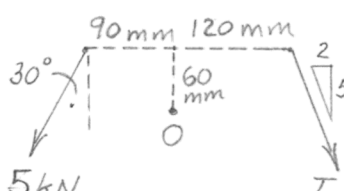


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$$M_O = 5[(\cos 30^\circ)90 + (\sin 30^\circ)60]$$

$$- T\left[\frac{5}{\sqrt{29}}(120) + \frac{2}{\sqrt{29}}(60)\right] = 0$$


The diagram shows a frame structure. A horizontal member of length 120 mm is connected to a vertical member of height 60 mm. A 5 kN force is applied at the top-left corner, acting at an angle of 30 degrees to the vertical. A tension force T is applied at the bottom-right corner. The dimensions are 90 mm for the horizontal distance from the vertical member to the point of application of the 5 kN force, and 120 mm for the horizontal distance from the vertical member to the point of application of the tension T. The vertical distance from the horizontal member to the point of application of the tension T is 60 mm. The origin O is at the bottom-left corner.

$$539.7 - 133.7T = 0, \underline{T = 4.04 \text{ kN}}$$

$$\sqrt{2^2 + 5^2} = \sqrt{29}$$

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