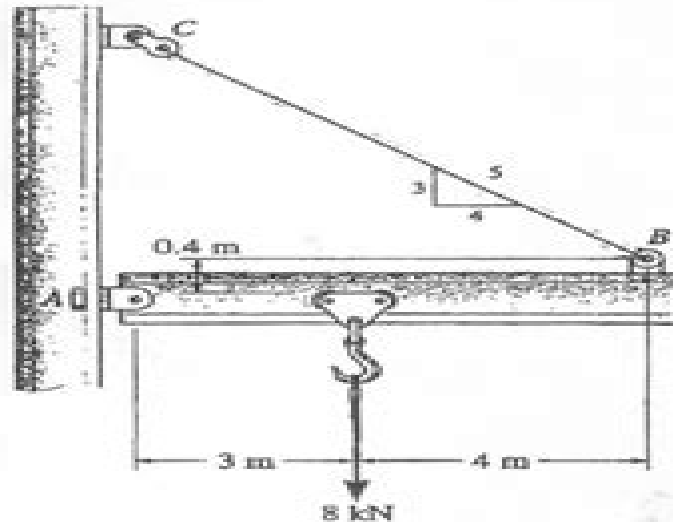


General Instructions

1. Closed books and closed notes. A one side A4 size formula sheet is allowed.
2. Write all your solutions in the space provided. Using back of the sheets is ok but you need clearly indicated on the front sheets.
3. You must draw a FBD for all the equilibrium problems. Make the diagrams and sketches as clear as possible, and show your derivations clearly. Incomplete solutions will receive only partial credit even if the answer is correct. Present your results in three significant digits with proper units; box your final results.

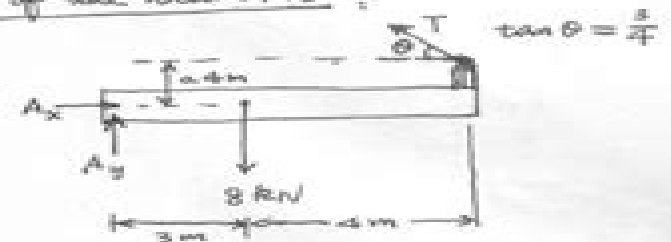
Problem 1 (20 points): A jib crane AB is shown below. It is pin-connected at A and supported by a cable BC. Neglect its weight. Find the reaction force at A and the cable tension.



Knowns: pin support at A;
BC is a cable; neglect the ^{beam} weight.

Find: reaction force at A: A_x, A_y ;
cable tension, T .

FBD of the beam AB:



Eqs. of Equilibrium:

$$(\sum) \Sigma M_A = 0: (T \cos \theta)(0.4\text{m}) + (T \sin \theta)(7\text{m}) - (8\text{ kN})(3\text{m}) = 0$$

Hence, $T \left(\frac{3}{4}\right)(0.4\text{m}) + T \left(\frac{3}{5}\right)(7\text{m}) = 24\text{ kN}\cdot\text{m}$

$$\boxed{T = 5.31\text{ kN}}$$

Also, $(\sum) \Sigma F_x = 0: A_x - T \left(\frac{3}{5}\right) = 0, A_x = \frac{3}{5}T = \boxed{4.25\text{ kN} = A_x}$

$(\sum) \Sigma F_y = 0: A_y - 8\text{ kN} + T \left(\frac{4}{5}\right) = 0, A_y = 8\text{ kN} - \frac{4}{5}(5.31) = \boxed{4.81\text{ kN} = A_y}$

Answers For Statics Plato

F Rizvi



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In a fast-paced digital era where connections and knowledge intertwine, the enigmatic realm of language reveals its inherent magic. Its capacity to stir emotions, ignite contemplation, and catalyze profound transformations is nothing short of extraordinary. Within the captivating pages of **Answers For Statics Plato** a literary masterpiece penned by way of a renowned author, readers embark on a transformative journey, unlocking the secrets and untapped potential embedded within each word. In this evaluation, we shall explore the book's core themes, assess its distinct writing style, and delve into its lasting impact on the hearts and minds of those who partake in its reading experience.

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