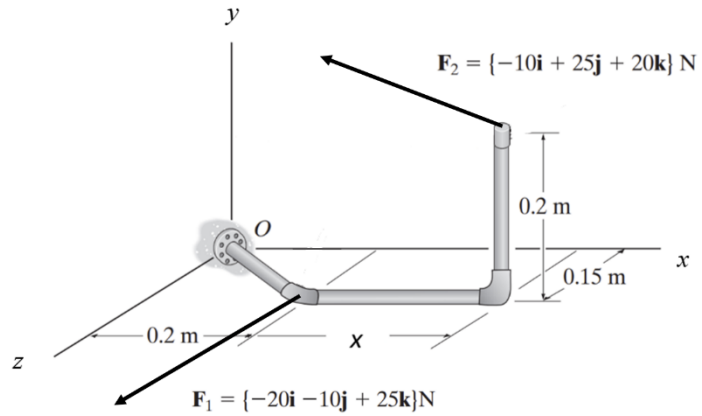


PROBLEM 1 (15 POINTS)

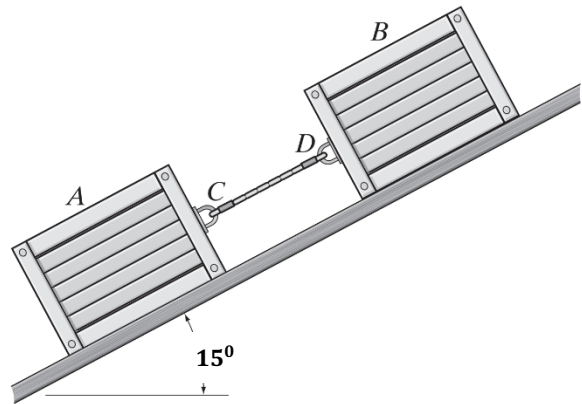
Determine the distance x such that the magnitude of the moment at O equals $15 \text{ N} \cdot \text{m}$. x must be positive. (Figure not to scale)



Name _____

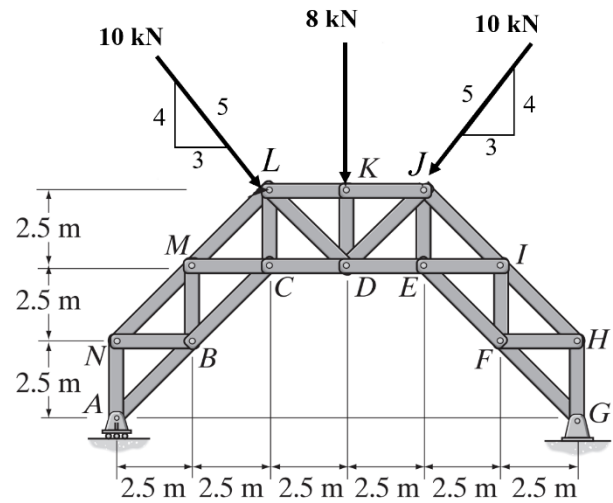
PROBLEM 2 (20 POINTS)

Crate B weighs 150 lb. It is connected to crate A by a cable (CD on the figure) and placed on an inclined plane. Let w_A be the weight of crate A. What value of w_A will cause the system to be on the verge of sliding down? The coefficients of static friction between the crates and the plane are $\mu_A = 0.25$ and $\mu_B = 0.35$.



PROBLEM 3 (15 POINTS)

Determine the force in members CL and EJ of the truss, and state if the members are in tension or compression. Neglect the weight of the members. Write your results on the table.

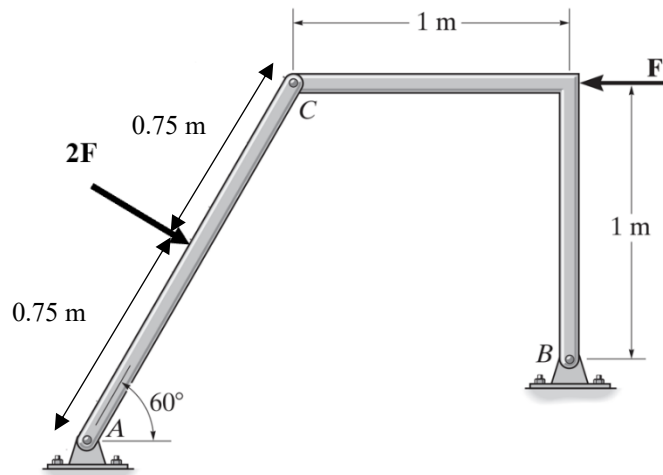


BAR	MAGNITUDE (kN)	Tension or Compression
CL		
EJ		

Name _____

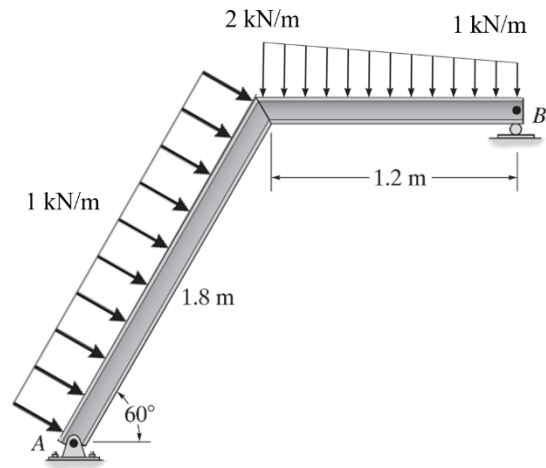
PROBLEM 4 (20 POINTS)

Determine the horizontal and vertical components of reaction that the pins A and B exert on the two-member frame. Length of AC is 1.5 m. Set $F = 200$ lb. Draw a figure with your results and box it.



PROBLEM 5 (15 POINTS)

Determine the reactions at pin support A and roller support B. Draw a figure with your results and box it.



PROBLEM 6 (15 POINTS)

If cable BC is subjected to a tension of 300 lb and the force shown in the figure $F = 900$ lb

- Determine distance d
- Compute the components of the reaction at hinge A.

