

Name: _____

Class #: _____

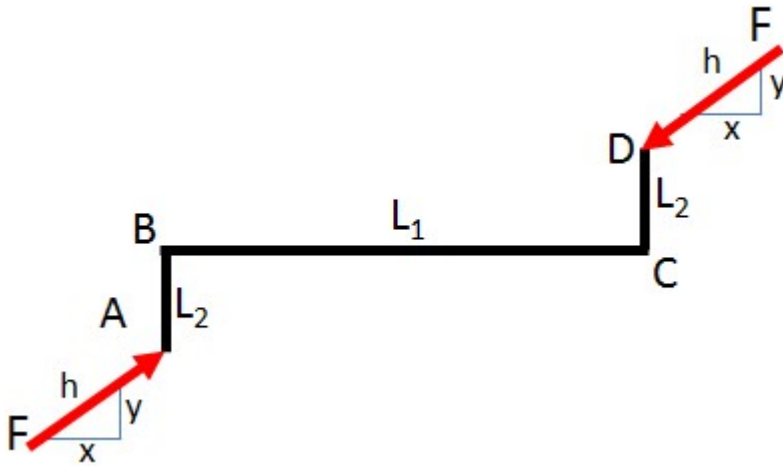
Instructor: Parker Schnepf

Class: _____

Section #: _____

Assignment: 4.4 Homework Exercises

Question 1: (10 points)

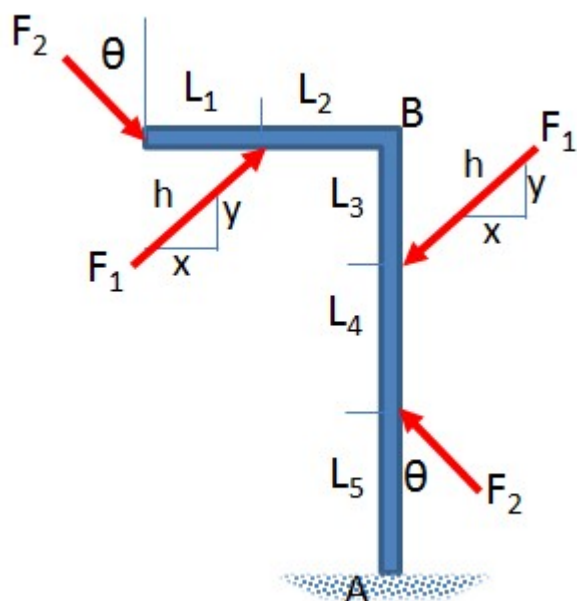


Find the couple moment acting on the structure, given:

 $F = 500 \text{ lbs}$, $L_1 = 12 \text{ ft}$, $L_2 = 3 \text{ ft}$, $x, y, h = 12, 5, 13$, respectively
(ans: $M = 462 \text{ lb}\cdot\text{ft}$)

Select problem completion status from drop-down list:

Question 2: (10 points)

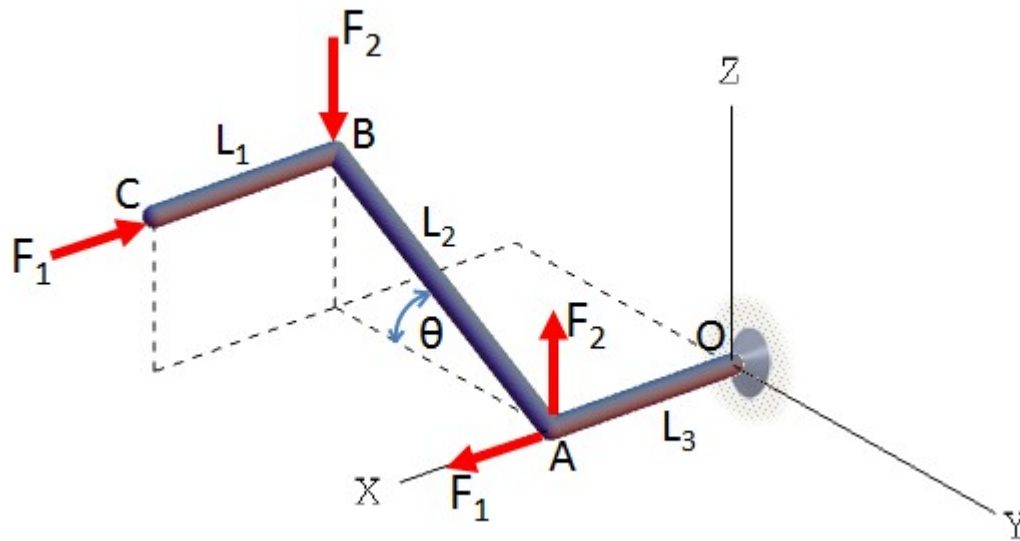


Neglecting the thickness of the structure, find the resultant couple moment acting on the structure, given:

$F_1 = 250 \text{ N}$, $F_2 = 200 \text{ N}$, $L_1 = 3 \text{ m}$, $L_2 = 2 \text{ m}$, $L_3 = 4 \text{ m}$, $L_4 = 2 \text{ m}$, $L_5 = 3 \text{ m}$, $\theta = 35^\circ$, $x, y, h = 4, 3, 5$, respectively.

(ans: $M = -969 \text{ N}\cdot\text{m}$)

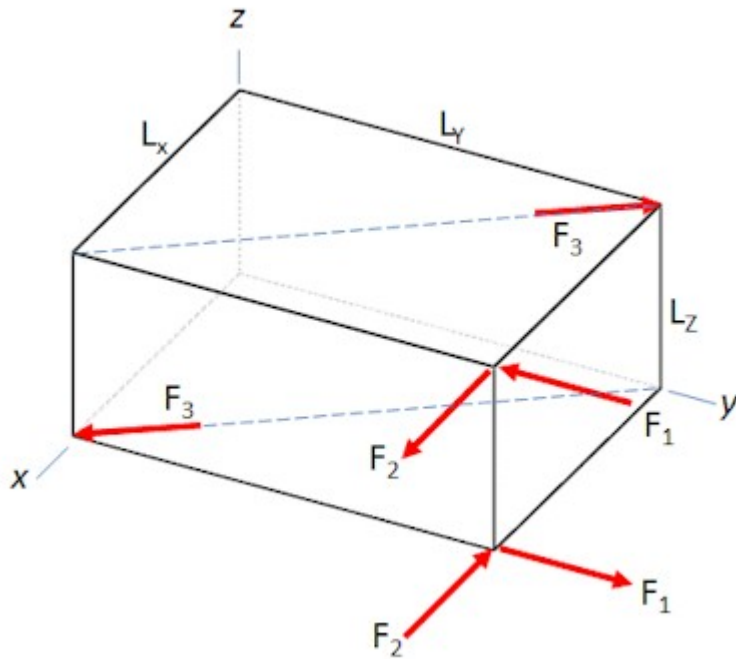
Select problem completion status from drop-down list:

Question 3: (10 points)

Find the resultant couple moment acting on the pipe structure, given:

$F_1 = 400 \text{ lbs}$, $F_2 = 450 \text{ lbs}$, $L_1 = 8 \text{ ft}$, $L_2 = 12 \text{ ft}$, $L_3 = 6 \text{ ft}$, $\theta = 60^\circ$
 (ans: $\vec{M}_R = \langle 2,700, -4,160, -2,400 \rangle \text{ lb}\cdot\text{ft}$)

Select problem completion status from drop-down list:

Question 4: (10 points)

Find the magnitude and direction angles of the resultant couple moment, given:

$F_1 = 125 \text{ lbs}$, $F_2 = 125 \text{ lbs}$, $F_3 = 250 \text{ lbs}$, $L_x = 2 \text{ ft}$, $L_y = 3.4 \text{ ft}$, $L_z = 1.8 \text{ ft}$
 (ans: $M_R = 163 \text{ lb}\cdot\text{ft}$, $\alpha = 179^\circ$, $\beta = 91.1^\circ$, $\gamma = 90^\circ$)

Select problem completion status from drop-down list:
