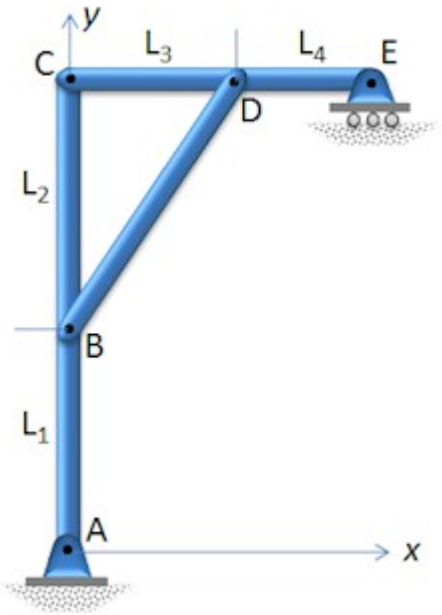
Online Homework System

Assignment Worksheet
6/16/22 - 4:07:16 PM MDT

Name: _____ **Class:**
Class #: _____ **Section #:** _____
Instructor: Parker Schnepf **Assignment:** 9.1 Homework Exercises

Question 1: (10 points)



Each member of the frame shown has a weight of 10 *lb/ft*. Find the centroid of the frame ($\bar{\mathbf{x}}$, $\bar{\mathbf{y}}$) and the reactions at pin **A** and roller **E**, given:

$\mathbf{L_1}$=3 *ft*, $\mathbf{L_2}$=4 *ft*, $\mathbf{L_3}$=2.5 *ft*, $\mathbf{L_4}$=2 *ft*

(ans: $\bar{\mathbf{x}}$ = 0.988 ft, $\bar{\mathbf{y}}$ = 4.91 ft, $\mathbf{A_X}$ = 0 lbs, $\mathbf{A_Y}$ = 127 lbs, $\mathbf{E_Y}$ = 35.6 lbs)

Select problem completion status from drop-down list:

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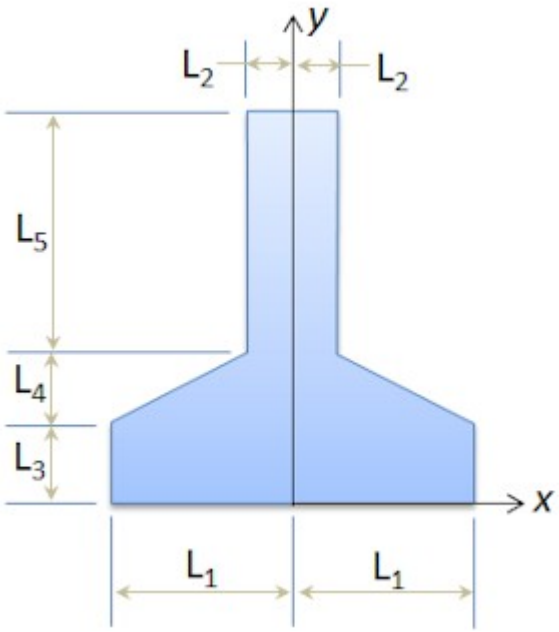
Question 2: (10 points)



Find the distance $\bar{\mathbf{y}}$ to the centroid of the cross-sectional shape, given:

$\mathbf{L_1}$ = 480 *mm*, $\mathbf{L_2}$ = 80 *mm*, $\mathbf{L_3}$ = 100 *mm*, $\mathbf{L_4}$ = 110 *mm*, $\mathbf{L_5}$ = 600 *mm*

(ans: $\bar{\mathbf{y}}$ = 246 mm)

Select problem completion status from drop-down list:

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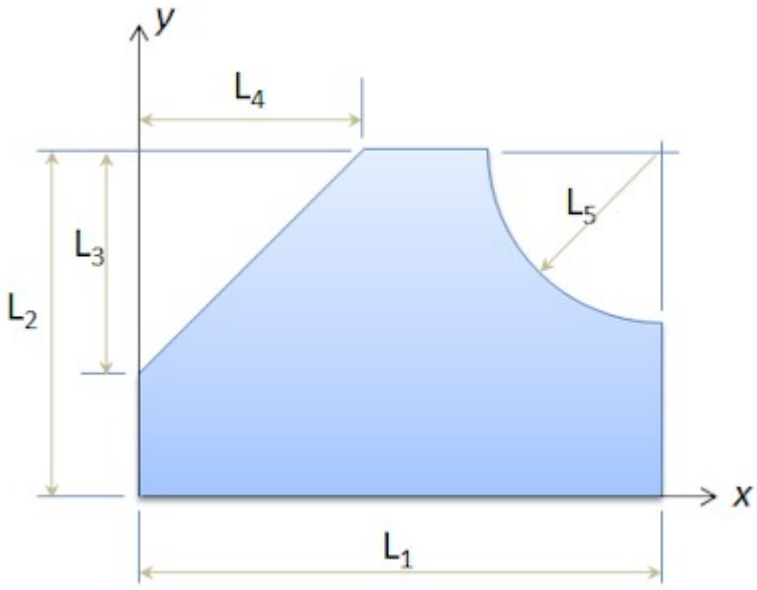
Question 3: (10 points)



Find the centroid ($\bar{\mathbf{x}}$, $\bar{\mathbf{y}}$) of the cross-sectional shape, given:

$\mathbf{L_1}$ = 120 *mm*, $\mathbf{L_2}$ = 50 *mm*, $\mathbf{L_3}$ = 35 *mm*, $\mathbf{L_4}$ = 40 *mm*, $\mathbf{L_5}$ = 25 *mm*

(ans: $\bar{\boldsymbol{x}}$ = 61.8 mm, $\bar{\boldsymbol{y}}$ = 21.6 mm)

Select problem completion status from drop-down list:

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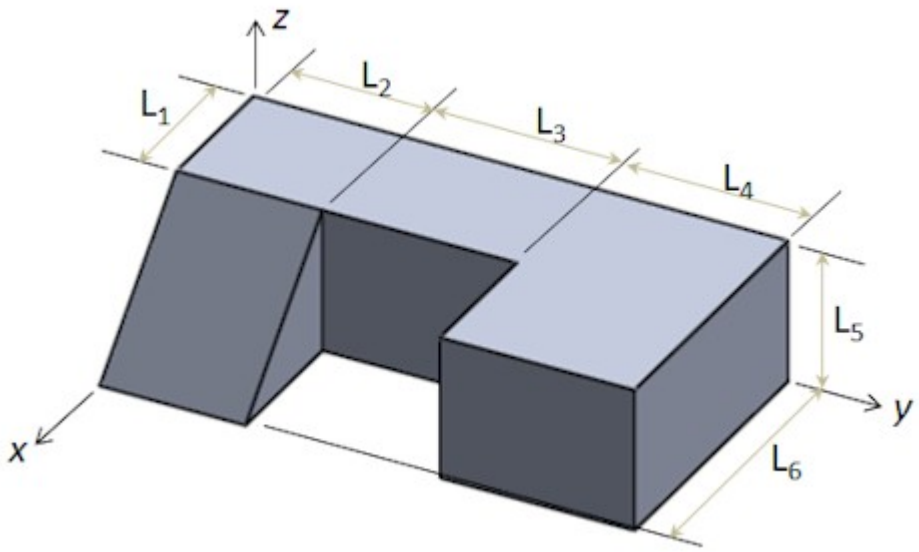
Question 4: (10 points)



Find the center of mass ($\bar{\mathbf{x}}$, $\bar{\mathbf{y}}$, $\bar{\mathbf{z}}$) of the block, given:

$\mathbf{L_1}$ = 5 *in*, $\mathbf{L_2}$ = 4 *in*, $\mathbf{L_3}$ = 6 *in*, $\mathbf{L_4}$ = 5 *in*, $\mathbf{L_5}$ = 3 *in*, $\mathbf{L_6}$ = 8 *in*

(ans: $\bar{\mathbf{x}}$ = 3.34 in, $\bar{\mathbf{y}}$ = 7.94 in, $\bar{\mathbf{z}}$ = 1.47 in)

Select problem completion status from drop-down list:

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