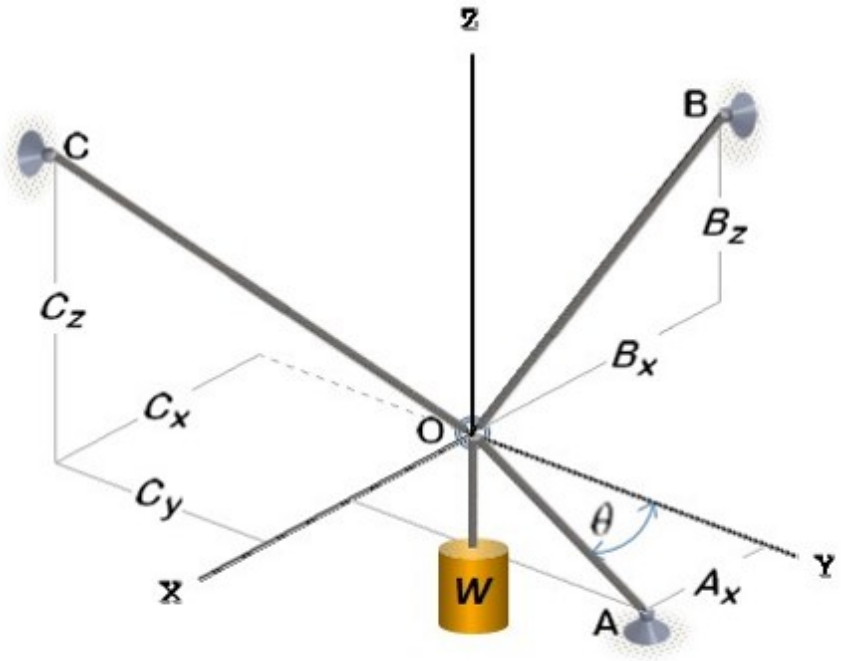
Online Homework System

Assignment Worksheet
6/16/22 - 4:00:12 PM MDT

Name: _____ **Class:**
Class #: _____ **Section #:** _____
Instructor: Parker Schnepf **Assignment:** 3.3 Homework Exercises

Question 1: (10 points)



Find the tension developed in cables **OA**, **OB**, and **OC**, given:
W = 100 *N*, **θ** = 45°, $\mathbf{A_X}$ = 4 *m*, $\mathbf{B_X}$ = 12 *m*, $\mathbf{B_Z}$ = 10 *m*, $\mathbf{C_X}$ = 8 *m*, $\mathbf{C_Y}$ = 12 *m*, $\mathbf{C_Z}$ = 6 *m*
(ans: $\boldsymbol{F_A}$ = 74.9 N, $\boldsymbol{F_B}$ = 115 N, $\boldsymbol{F_C}$ = 68.9 N)

Select problem completion status from drop-down list:

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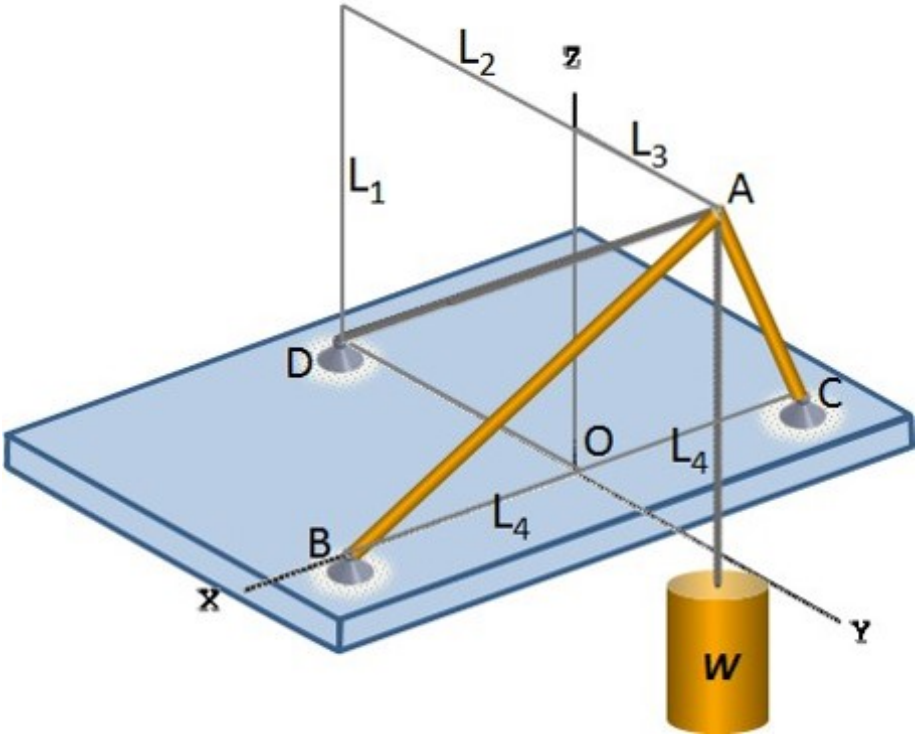
Question 2: (10 points)

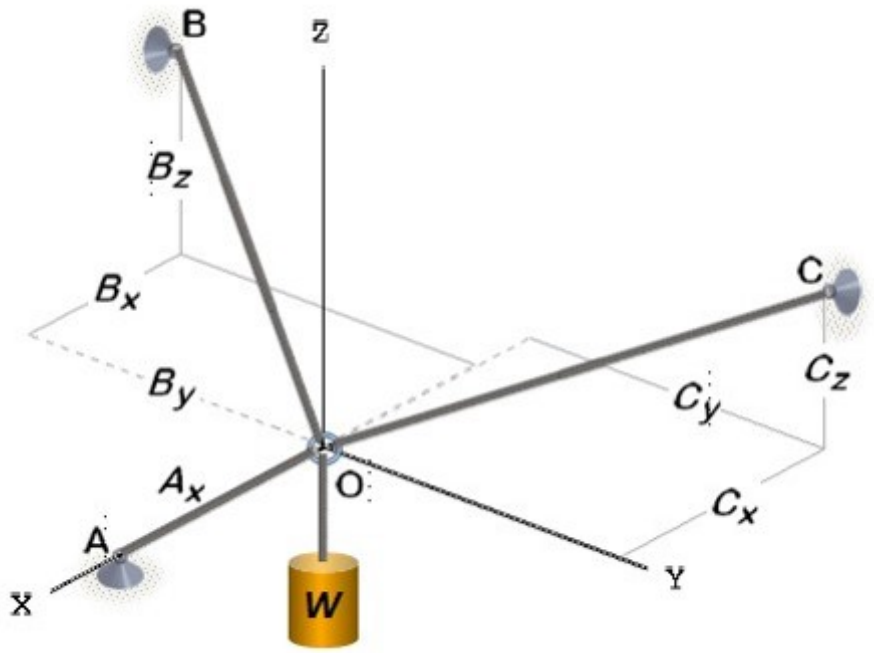


Find the compressive forces in members **AB** and **AC** and the tensile force in cable **AD** of the structure below, given:
W = 500 *lbs*, $\mathbf{L_1}$ = 10 *ft*, $\mathbf{L_2}$ = 8 *ft*, $\mathbf{L_3}$ = 4 *ft*, $\mathbf{L_4}$ = 7 *ft*
(ans: $\boldsymbol{F_{AD}}$ = 391 lbs T, $\boldsymbol{F_{AB}}$ = -482 or 482 lbs C, $\boldsymbol{F_{AC}}$ = -482 or 482 lbs C)

Select problem completion status from drop-down list:

_____

Question 3: (10 points)



The maximum allowable tension in cables **OA**, **OB**, and **OC** is 1,000 *N*. Find the maximum weight, **W**, such that none of the cables exceed the maximum allowable tension, given:

$\mathbf{A_X}$ = 5 *m*, $\mathbf{B_X}$ = 2 *m*, $\mathbf{B_Y}$ = 3 *m*, $\mathbf{B_Z}$ = 4 *m*, $\mathbf{C_X}$ = 3 *m*, $\mathbf{C_Y}$ = 4 *m*, $\mathbf{C_Z}$ = 5 *m*

*(ans: **W** = 1,440 N)*

Select problem completion status from drop-down list:

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