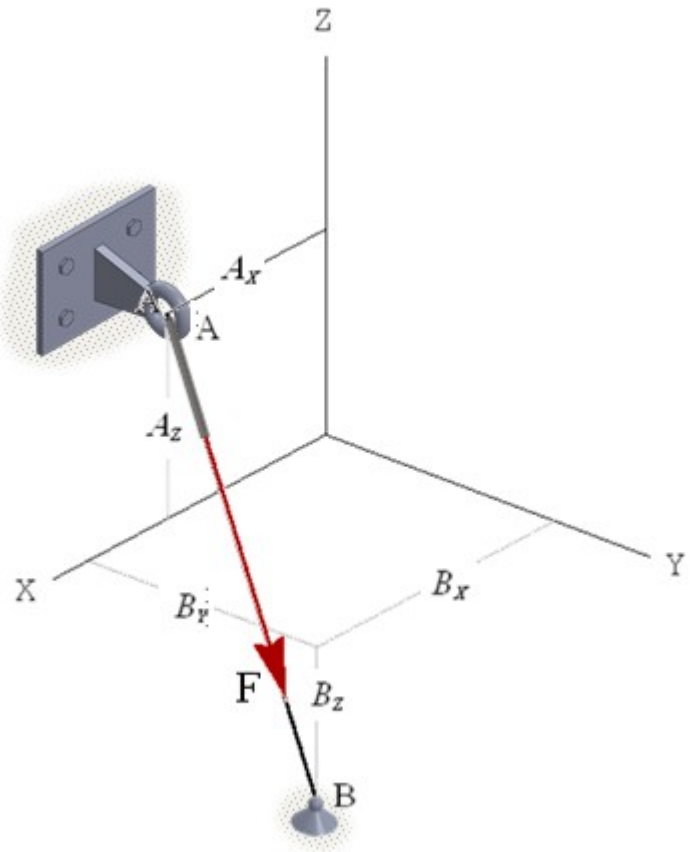
Online Homework System

Assignment Worksheet
6/25/22 - 10:12:44 PM MDT

Name: _____ **Class:**
Class #: _____ **Section #:** _____
Instructor: Parker Schnepf **Assignment:** 2.2 Homework Exercises

Question 1: (10 points)

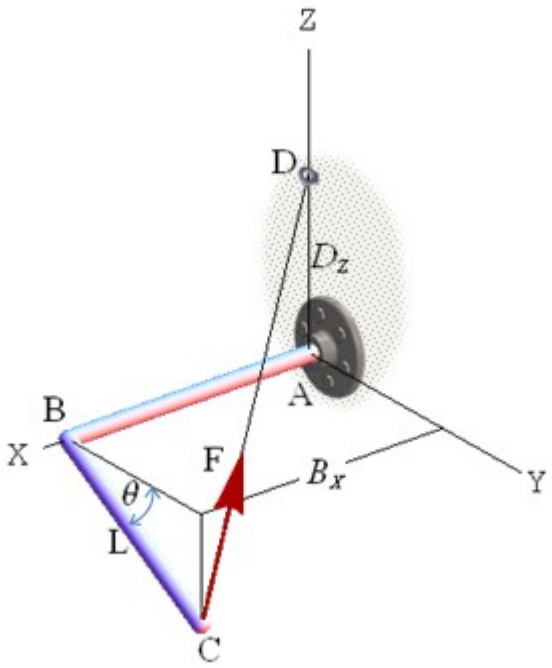


Express force **F** as a Cartesian Vector, given:
F = 500 *lbs*, $\mathbf{A_x}$ = 3 *ft*, $\mathbf{A_z}$ = 1 *ft*, $\mathbf{B_x}$ = 4 *ft*, $\mathbf{B_y}$ = 5 *ft*, $\mathbf{B_z}$ = 2 *ft*,
(ans: $\bar{\mathbf{F}}$ = <84.5, 423, -254> lbs)

Select problem completion status from drop-down list:

_____

Question 2: (10 points)



Pipe **ABC** is supported at point **C** by a rope that extends from point **C**to point **D**. Find force **F** acting along the rope as a Cartesian Vector, given:

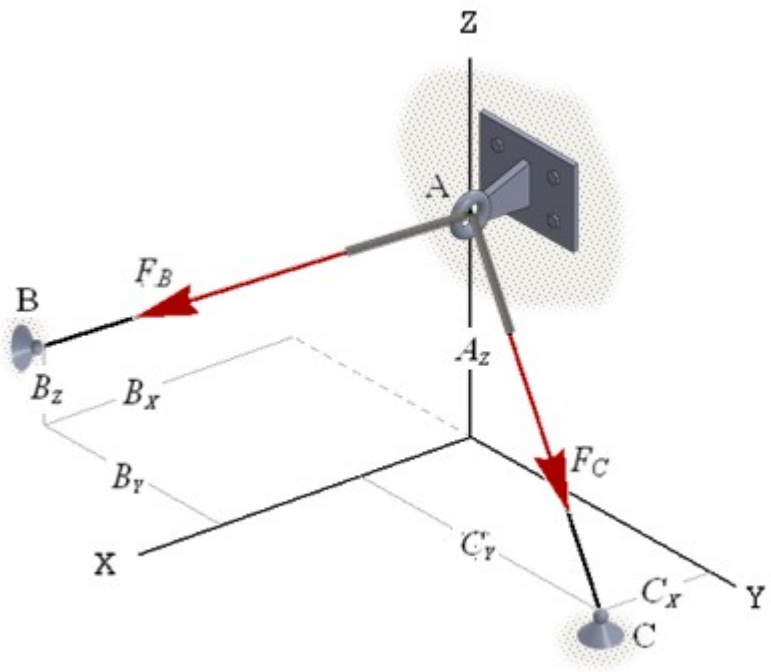
F = 180 *N*, **L** = 10 *m*, $\mathbf{B_x}$ = 12 *m*, $\mathbf{D_z}$ = 16 *m*, **θ** = 25°

(ans: $\bar{\boldsymbol{F}}$ = <-85.7, -64.7, 144> N)

Select problem completion status from drop-down list:

_____

Question 3: (10 points)



Find the magnitude and direction coordinate angles of the resultant, $\mathbf{F_R}$ acting at point **A**, given:
$\mathbf{F_B}$ = 750 *lbs*, $\mathbf{F_C}$ = 500 *lbs*, $\mathbf{A_z}$ = 5 *ft*, $\mathbf{B_x}$ = 4 *ft*, $\mathbf{B_y}$ = -2 *ft*, $\mathbf{B_z}$ = 3 *ft*, $\mathbf{C_x}$ = 2 *ft*, $\mathbf{C_y}$ = 5 *ft*,
(ans: $\mathbf{F_R}$ = 990 lbs, $\boldsymbol{\alpha}$ = 40.9°, $\boldsymbol{\beta}$ = 88°, $\boldsymbol{\gamma}$ = 131°)

Select problem completion status from drop-down list:

_____