Homework Problem H3.A

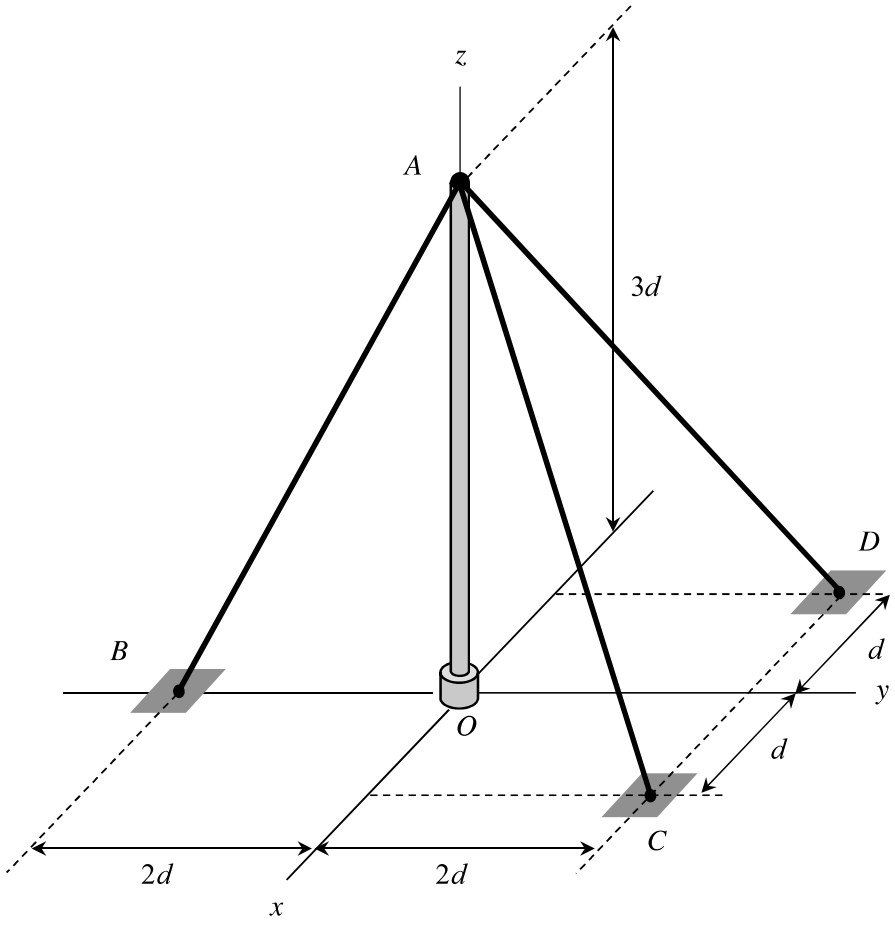
Given: Tension forces $\vec{F}_{AB}$, $\vec{F}_{AC}$ and $\vec{F}_{AD}$ act on mast AO at point A. The tension in cable AB is known to be *T*.

Find:

a) Determine the projection of $\vec{F}_{AB}$ on the direction of cable AD. Write your answer as a vector in terms of *T*.

b) Determine the angle between cables AB and AC.

c) Determine the angle between cables AD and AC.



Homework Problem H3.B

Given: Pre-tensioned cables AB and AD, having tensions of $2T$ and T, respectively, are attached to end A of the L-shaped bracket and exert forces of $\vec{F}_{AB}$ and $\vec{F}_{AD}$, respectively, on the bracket due to these tensions.

Find:

a) Determine the vector projection of $\vec{F}_{AB}$ onto cable AD.

b) Determine the vector projection of $\vec{F}_{AD}$ onto cable AB.

c) Determine the angle that exists between cables AD and AB.

Use the following parameter value in your analysis: $\phi = 25°$.