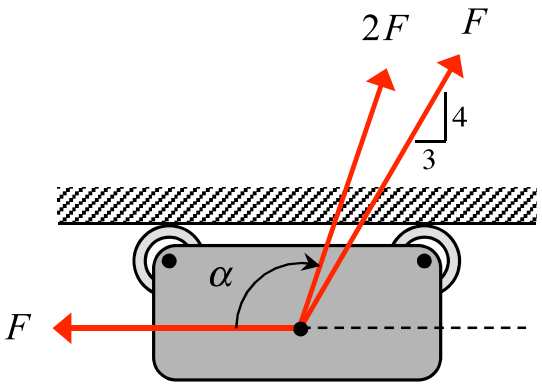
Homework H2.A

Given: Three forces act on the roller guide shown.

Find: Determine the angle α for which the resultant of the three applied forces has a zero horizontal component.



Homework H2.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 unit vector and force vector for $\vec{F}_{AB}$.

b) Determine the unit vector and force vector for $\vec{F}_{AD}$.

c) Calculate the direction cosines and direction angles for $\vec{F}_{AD}$.

d) Determine the resultant of $\vec{F}_{AB}$ and $\vec{F}_{AD}$.

Use the following parameter value in your analysis: $\phi = 40°$.