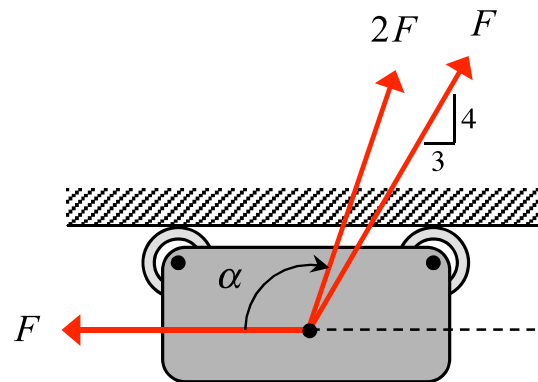


Homework H2.A

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: Tension forces $\vec{F}_{AB}$, $\vec{F}_{AC}$ and $\vec{F}_{AD}$ act on mast AO at point A.

Find:

- Determine the unit vector and force vector for $\vec{F}_{AB}$.
- Determine the unit vector and force vector for $\vec{F}_{AC}$.
- Calculate the direction angles and direction cosines for $\vec{F}_{AC}$.

Use the following parameter values in your analysis: $F_{AC} = 100$ lb, $F_{AB} = 120$ lb, $F_{AD} = 120$ lb, $b = 3$ ft, $d = 4$ ft and $L = 12$ ft.

