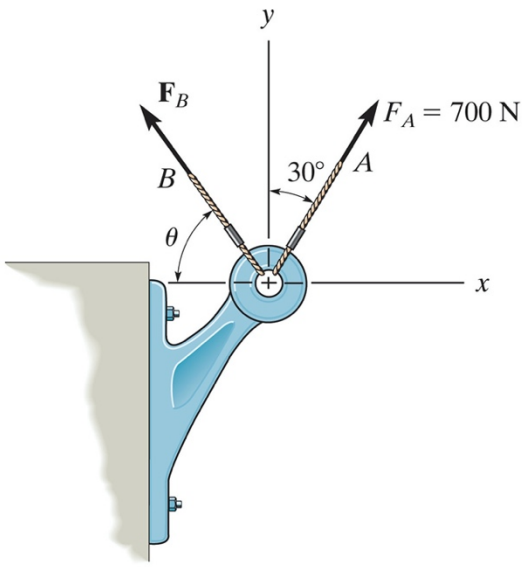
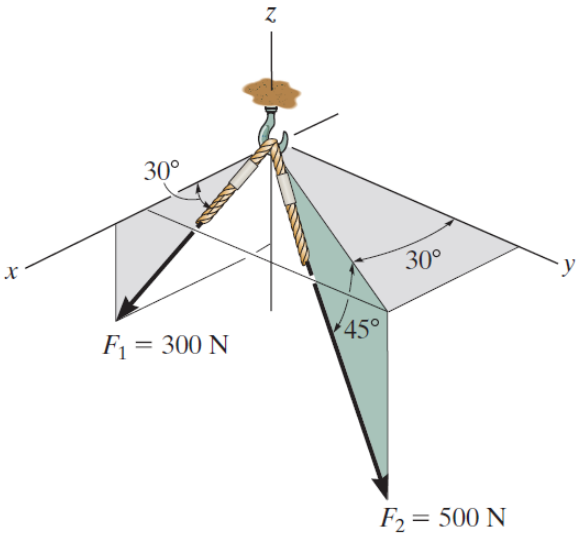
Submit your complete solution via MyCourses by Monday Nov 2, 23.59.

Exercise 1
Determine the magnitude and orientation, measured counterclockwise from the positive y axis, of the resultant force acting on the bracket, if $F_B = 600$ N and $\theta = 20°$.

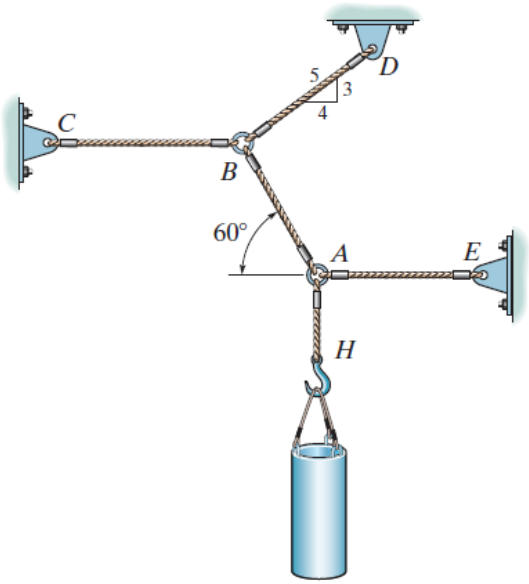


Exercise 2
Express each force as a Cartesian vector.

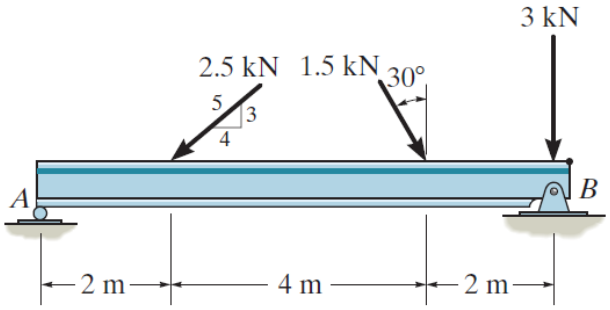


Exercise 3
The 30 kg pipe is supported at A by a system of five cords. Determine the force in each cord for equilibrium.

Answer: $T_{HA} = 294$ N; $T_{AB} = 340$ N; $T_{AE} = 170$ N; $T_{BD} = 490$ N; $T_{BC} = 562$ N.



Exercise 4
Replace the force system acting on the beam by an equivalent force and couple moment at point B.



Exercise 5
Replace the distributed loading by an equivalent resultant force, and specify its location on the beam, measured from the pin at A.

Answer: $F_R = 15.0$ kN; $d = 3.40$ m.