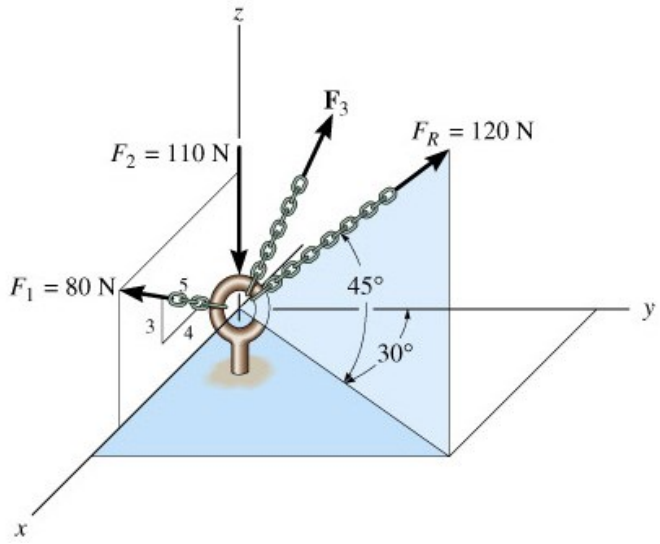
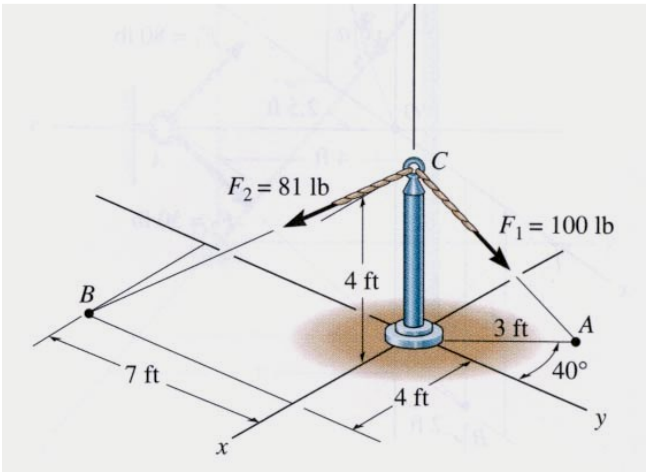
PCS211 P2022 Tutorial 2

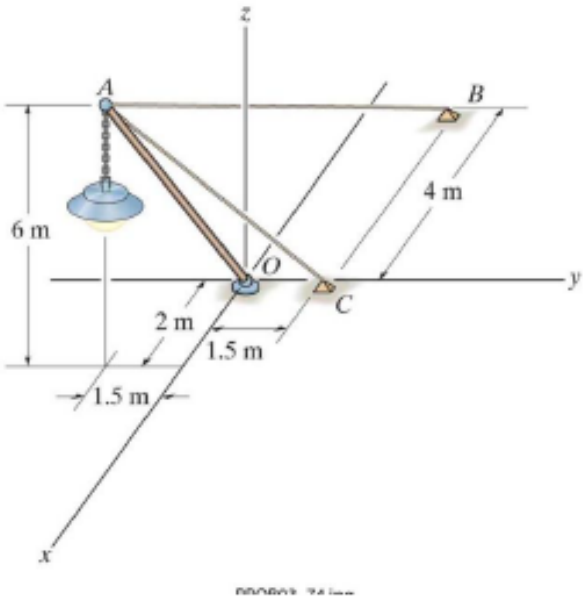
1. Determine the magnitude and coordinate direction angles of the forces F_1 and F_R.



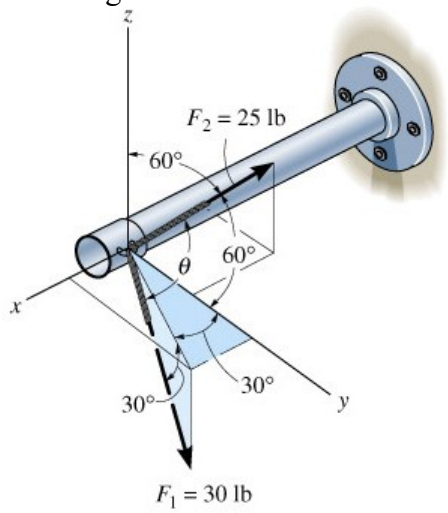
2. Two forces are acting on a pipe as shown in the figure. Find the magnitude and the coordinate direction angles of the resultant force.



3. The lamp has a mass of 15 kg and is supported by a pole *AO* and cables *AB* and *AC*. If the force in the pole acts along its axis, determine the forces in *AO*, *AB*, and *AC* for equilibrium.



4. Determine the projection of F_1 along the line of action of F_2 and the angle θ.



5. The pilot of an airplane pulls into a steep 45° climb at 300 km/h and releases a package at position *A*. Calculate the horizontal distance *s* from the point of release to the point at which the package strikes the ground and find the angle the package strikes the ground.