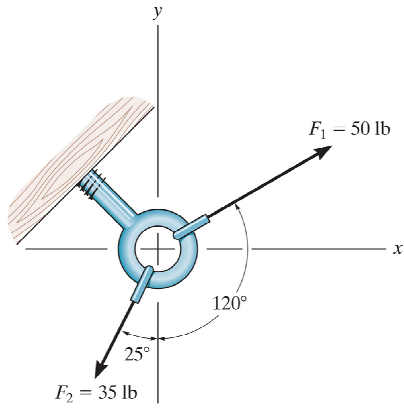
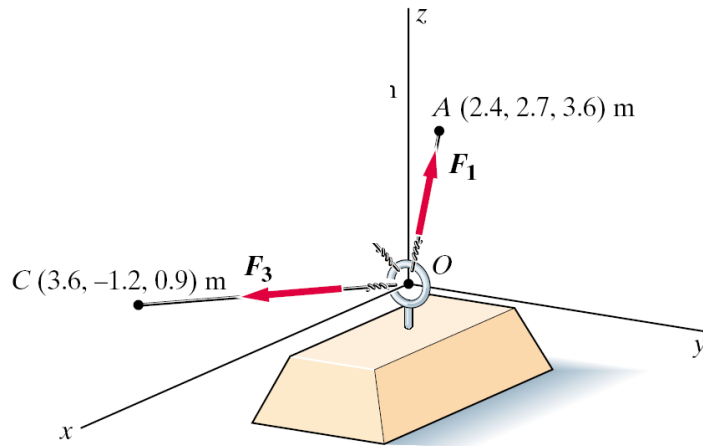


Statics
Practice Exam 1

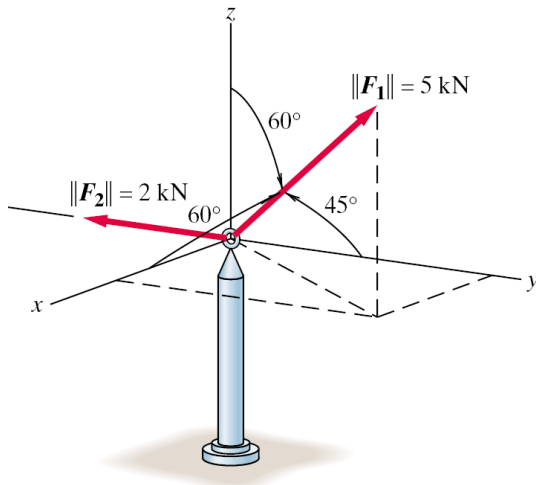
1. Determine the magnitude of the resultant force and its direction.



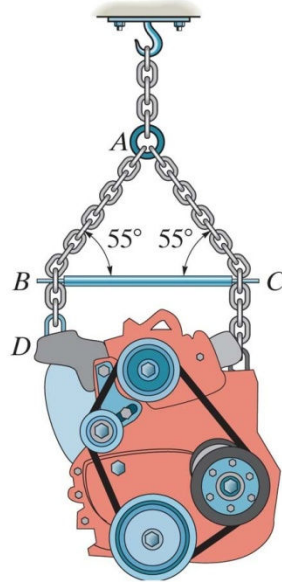
2. The cables are attached to a block as shown; determine the angle between them.



3. Two forces F_1 and F_2 are applied to a post as shown. Write the \mathbf{F}_R :
- in terms of Cartesian vector notation
 - in terms of magnitude and the direction cosines
 - as a unit vector along the line of action of \mathbf{F}_R



4. Draw a Free Body Diagram of the ring at A and find the tension in cables B and C if the engine has a mass of 200 kg.



5. Circle the scalar quantities below:

length

mass

weight

velocity

force

6. Two points in 3-D space have coordinates of P (1, 2, 3) and Q (4, 5, 6) meters. The position vector \mathbf{r}_{QP} is given by

A) $\{3\mathbf{i} + 3\mathbf{j} + 3\mathbf{k}\}$ m

B) $\{-3\mathbf{i} - 3\mathbf{j} - 3\mathbf{k}\}$ m

C) $\{5\mathbf{i} + 7\mathbf{j} + 9\mathbf{k}\}$ m

D) $\{-3\mathbf{i} + 3\mathbf{j} + 3\mathbf{k}\}$ m

E) $\{4\mathbf{i} + 5\mathbf{j} + 6\mathbf{k}\}$ m

7. Circle the right-hand coordinate systems

