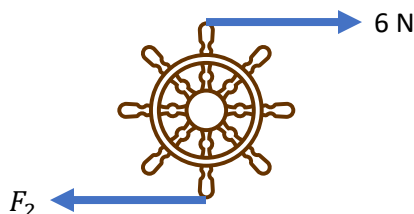
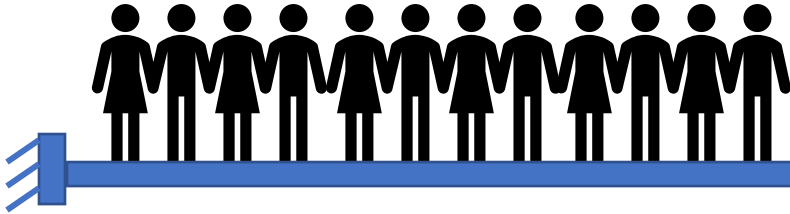


Statics SI Worksheet 6

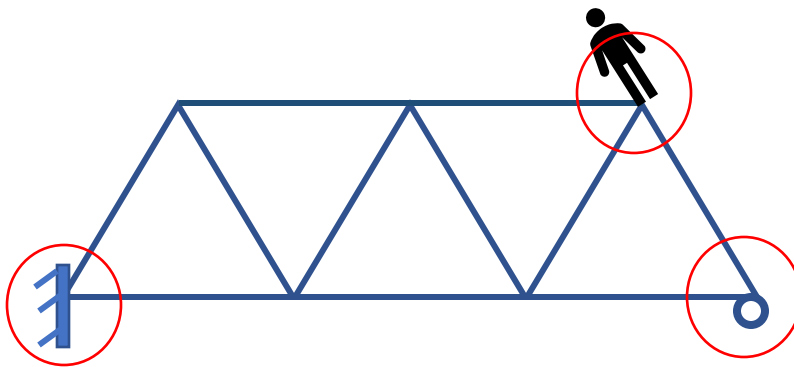
1. The cross product, $\mathbf{r} \times \mathbf{F}$ gives us...
 - a. The moment components in vector form created by the force $\mathbf{F}$ at a distance $\mathbf{r}$
 - b. The magnitude of the moment created by the force $\mathbf{F}$ at a distance $\mathbf{r}$
 - c. The dot product of the moment created by the force $\mathbf{F}$ at a distance $\mathbf{r}$
 - d. The moment component in scalar form created by the force $\mathbf{F}$ at a distance $\mathbf{r}$
2. A couple moment is...
 - a. Moments that are in love
 - b. The moment produced by two parallel forces that have the same magnitude
 - c. The moment produced by two perpendicular forces that have the same magnitude
 - d. The worst thing ever
3. When we have a single rigid body, the force vector...
 - a. Can be ignored
 - b. Has to remain in the exact original position
 - c. Can be moved to anywhere outside of the rigid body
 - d. Can be moved to any convenient point along the rigid body because it is a sliding vector
4. What does static equilibrium mean?
 - a. The sum of a few of the forces is equal to zero
 - b. The sum of a few of the moments is equal to zero
 - c. If you know what static equilibrium means, you're a nerd
 - d. The sum of all the forces and all the moments is equal to zero
5. I was put in charge of steering a cruise ship after the captain decided to dip. If I am creating an equivalent couple moment about the wheel that is 3ft in diameter, what is F_2 ? What is the total moment I am creating about the center of the wheel?



6. I decide to build an 8-foot-long cantilever deck in Ohio so I can watch the racoons fight each other. If the deck needs to be able to hold 12 people each weighing 150 LBS, what force and moment should the deck be designed for? (Hint: think about where the maximum moment would occur).



7. I am kayaking in the river and see someone about to bungee jump off the truss system bridge above. Just as I snap a picture, the person gets scared and passes out. If my photo is depicted below, draw FBDs at each of the points of interest.



8. What are the reactions?

