11.6.1. The entrance door to a video store is pivoted about the hinges on the left side of the door. When you begin to push on the right side of the door to enter the store, what is the direction of the torque on the door?
   a) into the store
   b) out of the store
   c) upward
   d) downward
   e) none of the above

3.8.9. If the magnitude of position vector \( \mathbf{r} \) and force vector \( \mathbf{F} \) are \( r \) and \( F \) respectively, under what conditions does the torque vector \( \mathbf{\tau} = \mathbf{r} \times \mathbf{F} \)?
   a) This occurs when the two vectors are perpendicular to one another.
   b) This occurs when the two vectors have the same magnitude.
   c) This situation never occurs.
   d) This occurs when the two vectors are parallel to one another.
   e) This always occurs, regardless of the particular vectors involved.

11.10.1. Which one of the following expressions allows one to calculate the angular momentum for a rigid body about a fixed axis?
   a) \( \frac{1}{2} I \omega^2 \)
   b) \( \frac{1}{2} MR^2 \)
   c) \( 2I \omega \)
   d) \( I \omega \)
   e) \( \frac{1}{2} MRr^2 \)

11.11.2. What happens when a spinning ice skater draws in her outstretched arms?
   a) Her moment of inertia decreases causing her to slow down.
   b) Her angular momentum decreases.
   c) The torque that she exerts increases her moment of inertia.
   d) Her angular momentum increases.
   e) Her moment of inertia decreases causing her to speed up.

11.6.1. Why do long jumpers rotate their arms while airborne?
   a) To increase their total angular momentum
   b) To produce uplift against the air
   c) To look good for the cameras
   d) To create extra torque during the jump
   e) To maintain body orientation by transferring angular momentum