1. Read the Torque notes posted on Perusall.

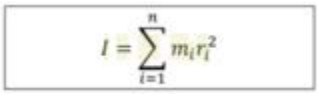
2. **Due Monday October 23rd:** Write an original post about the reading, using the prompts below as a guide:

- Give two examples of when you use torque to achieve what you want in your day to day life and explain the physics behind your example. My example is the classic example of shutting a door. We push on the handle which is located far from the axis of rotation (pivot point). This means it takes less force to exert the same torque, and thus less force to cause the same angular acceleration, making it easier to shut the the door. Now you think of two different examples from your day to day life.
- Of the 11 worked examples in the notes, which one do you enhanced your learning the most and why?
- What are you still confused about? Be as specific as possible.

3. **Due Thursday October 27th:** Respond to at least 2 posts written by another group members as well as to comments on your own original post. Make your responses insightful, don't just say something meaningless, like "yeah, I agree" or "that's really interesting." Push each other to think more deeply. Ask questions, clarify, explain. Get the conversations started!

Sample Thread:

Original Poster



One example of the use of torque in my day to day life is opening a trash can to throw something out. When opening the lid, I would grab the outermost part to be as far away from the axis of rotation as possible so it takes less force to open it. I would also lift it straight up and not at an angle so I won't be putting in useless force pushing on it if it was at an angle and so it's the most effective. Another example is opening the faucet (mine is a handle that spins around an axis of rotation). Just like my first example, I would grab the end of the handle to be as far away from the axis of rotation so less force is needed. Also, I would turn it in a perpendicular direction and not at an angle for it to be the most effective as possible.

An example that enhanced my learning the most would have to be example 9. Because the object was a sphere, it brought it cases where different formulas for I was needed instead of the simple I = MR^2. Another example that helped me was the figure skater example. It was simple but because it involved a human who can change body positions, each position has a different I. In the case of this example, we found that it's bigger when the skater's arms are outstretched because R is bigger.

What I'm having a difficulty understanding is the formula that I attached to this post (It wouldn't let me copy paste it). It is mainly the n and i=1 that confuses me and also how this equation was derived. I'm also having a hard time to understand what moment of inertia really is. I understand how to found it but I'm struggling to figure out what it really is in the examples.

Responder 1

I really like the fact that you mentioned where you apply a force on the object AND the angle of your force. I had not though about the angle formed by the force exerted on an object and its axis of rotation, but you were right to talk about it, because it does affect the magnitude of the torque. Since the magnitude of torque is equal to the radius times F times sin of theta, a 90 degree angle (which as a sin of 1) is the angle at which the torque's magnitude is the greatest.

10/26/2017

Responder 2

Your trashcan example really helped me understand the use of torque and its benefits. It would explain why every handle is always the further away from the point of rotation that it can. This equation you added to the post can be resumed by saying that you add "n" times mr^2 for and object + mr^2 for another object considering "n" is the amount of objects that you are evaluating for your inertia formula.

10/27/2017

Original Poster

Thank you very much for that example! Since today in class we went over moment of inertia, we got to understand it more but even in class, we didn't speak about "n" so your explanation that n is basically a number of masses in the system. Now my question is do we only use "n" when all the masses are the same weight?