

# Physics Cycle Sheet

March 30, 2020 thru April 3, 2020



**Goals:** TLW review the semester so far, then begin developing the angular motion equations.

**Monday:** Download Review I and II  
“Inclined Planes and Friction”  
“Momentum and Impulse”

**Homework:** Finish

**Tuesday:** Download Review III and IV  
“Energy, Work and Power”  
“Torque”

**Homework:** Finish

**Wednesday:** Download “Angular Motion I”  
Watch Video

**Homework:** Do the problems on the back.

**Thursday:** Class @2:00 PM

**Homework:** Warm Ups #74 and 75

**Friday:** Download “Angular Motion II”  
Watch Video

**Homework:** Do the problems on the back.

## Vocabulary

|         |                   |                    |
|---------|-------------------|--------------------|
| torque  | tangential speed  | rotational inertia |
| lever   | centripetal force | rotational speed   |
| fulcrum | equilibrium       | center of mass     |

## Know the following

|                  |                      |
|------------------|----------------------|
| circular motion  | rotational inertia   |
| torque           | angular momentum     |
| angular velocity | angular acceleration |

## Contact Info

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## Torque

It is the product of force and lever-arm distance, which tends to produce rotation.

$$\text{torque} = \text{lever arm} \times \text{force}$$

## Fulcrum

It is the point where a lever will pivot.

## Rotational Inertia

The measure of an objects' resistance to a change in rotation.

If an object is at rest it tends to stay at rest; if rotating it tends to stay rotating unless acted upon by an external torque.

## Rotational Speed

The number of rotations or revolutions per unit of time.

revolutions per minute (RPM)  
radians per second  
 $360^\circ = 2\pi$  radians

## Tangential Speed

It's the linear speed tangent to a curved path.

## Angular Displacement

$$\theta = \frac{s}{r}$$

### **angular motion**

$$\omega_1 = \omega_0 + \alpha t$$

### **Centripetal Force**

It's a center seeking force that causes an object to follow a circular path.

### **Joule**

A joule is the amount of energy transferred to an object when a 1 N force is applied in the direction of force through a distance of one meter.