

EXAM 3

Name: _____ Student ID #: _____

TA (circle one): Ali Ben Brigham Dan Elspeth Eric Geoff

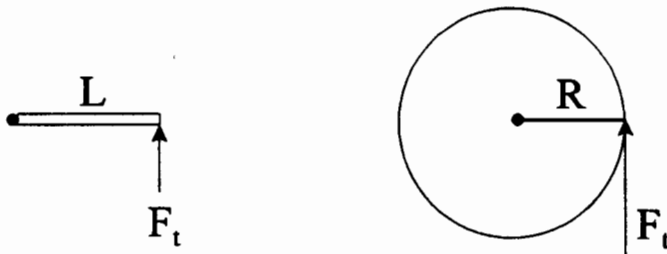
- A. [15 pts.] Two objects, A of mass m and B of mass $2m$, are subject to the same impulse. Assume both A and B are initially at rest. In the following statements fill in the blanks with either A for object A, B for object B, the same if objects A and B have the same value, or cannot tell.

$$\vec{F}\Delta t \rightarrow \boxed{A}$$

$$\vec{F}\Delta t \rightarrow \boxed{B}$$

At the end of the time interval,

1. A is the object with the greater speed.
 2. SAME is the object with the greater momentum.
 3. A is the object with the greater acceleration during the impulse time.
 4. A is the object with the greater KE.
 5. A is the object that traveled the greater distance.
- B. [15 pts.] Two objects, a rod of length L and mass m , and a disk of radius $R = L$ and mass m , can rotate about axes, the rod through an axis at its end ($I = \frac{1}{3} mL^2$) and the disk about an axis through its center of mass ($I = \frac{1}{2} mR^2$). Each object is subject to a constant tangential force for the same length of time. Both objects are initially at rest. In the following blank spaces below, enter rod, disk, the same if the described quantity is the same for both, or cannot tell for statement that follows.



1. SAME The object feeling the greater torque while F_t is applied.
2. ROD The object with the larger angular acceleration during the time interval.
3. ROD The object with the greater angular speed at the end of the time interval.
4. ROD The object that rotated through the greater number of rotations during the time interval.
5. DISK The object with the larger moment of inertia.