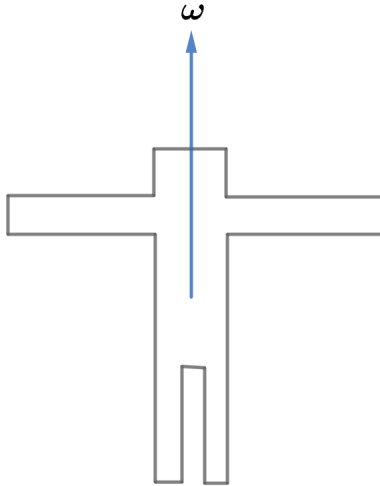


2011 F=ma Exam: Problem 7

Kevin S. Huang



Recall the rotational kinetic energy is given by

$$E = \frac{1}{2}I\omega^2$$

Using the angular momentum $L = I\omega$, we can rewrite

$$E = \frac{1}{2}L\omega$$

In our case, we have conservation of angular momentum since there is no external torque. Since L is constant, we see that doubling the angular velocity also doubles the energy. Thus, the answer is B.