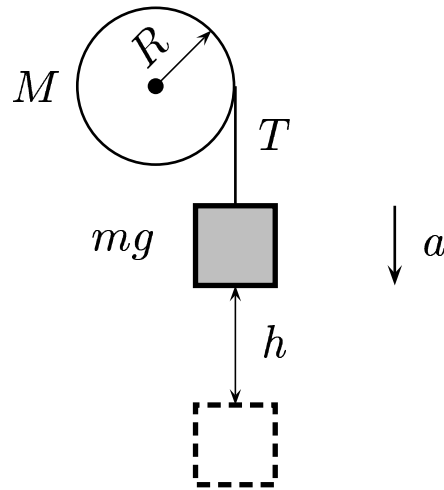


A circular disk with mass M and radius R is mounted at its center, about which it can rotate freely. A light cord wrapped around it supports mg .



Find equations of motion. Note: $a = R\alpha$.

- A) $TR = MR^2\alpha$ and $mg - T = ma$.
- B) $TR = MR^2\alpha$ and $T - mg = ma$.
- C) $TR = \frac{MR^2\alpha}{2}$ and $mg - T = ma$.
- D) $TR = \frac{MR^2\alpha}{2}$ and $T - mg = ma$.

Remember for a disk, $I = \frac{MR^2}{2}$.

Equations of motion are: $\tau = TR = I\alpha$ and $F = mg - T = ma$.
 Answer **C**.