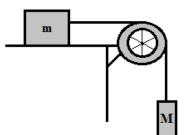# Rotating Ranking Task

A pulley system is shown below, whose string does not stretch. In the system there are two masses, with mass M = 15 kg, and mass m = 10 kg. The pulley's angular velocity, ω, angular acceleration, α, and its radius, R, are provided in the table below. (Recall that positive angular quantities are counterclockwise.)

Scenario	R	ω	α
A	0.3 m	10 rad/s	1 rad/s^2
B	0.1 m	12 rad/s	0 rad/s^2
C	0.2 m	12 rad/s	2 rad/s^2
D	0.1 m	20 rad/s	-4 rad/s^2
E	0.6 m	15 rad/s	0 rad/s^2
F	0.5 m	5 rad/s	-2 rad/s^2

Rank each scenario based on the speed of block M:

Fastest 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ Slowest

Justify your ranking:

Rank each scenario based on the magnitude of block M's acceleration:

Greatest 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ Least

Justify your ranking: