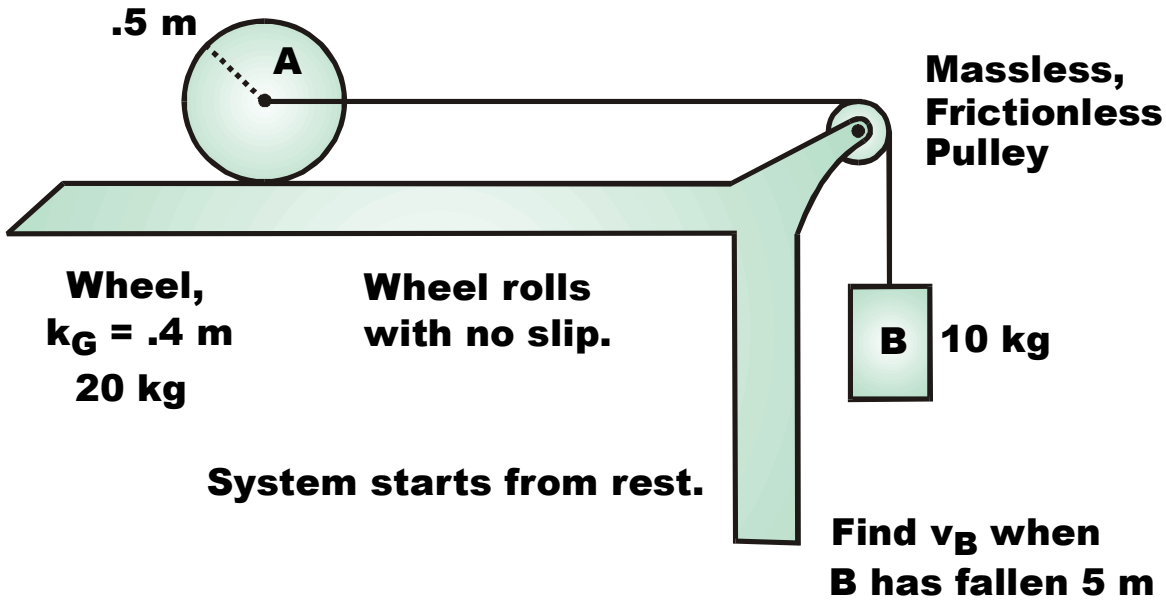
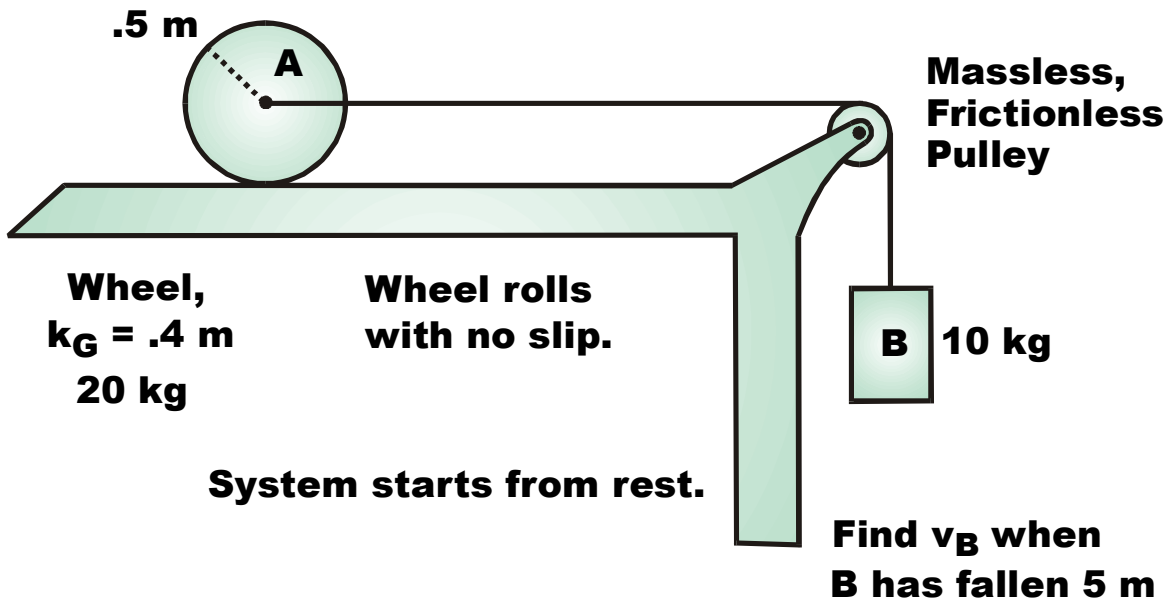
2. (25 points) Shown below is a 20 kg disk A whose center is attached to a 10 kg mass B via a massless cable. The system, starting from rest, is released to move, and the wheel rolls without slipping. When B has fallen 5 m, please determine the speed of B (v_B).




.5 m
A
Massless,
Frictionless
Pulley
Wheel,
k_G = .4 m
20 kg
Wheel rolls
with no slip.
B
10 kg
System starts from rest.
Find v_B when
B has fallen 5 m