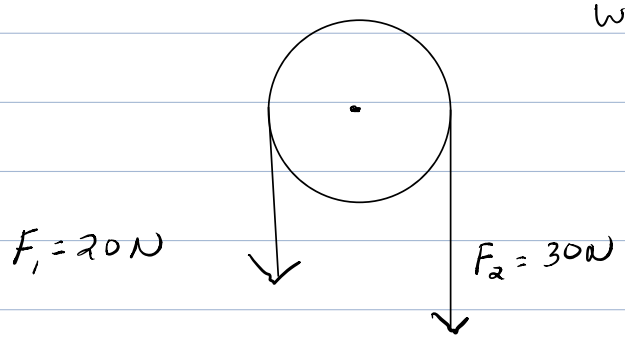
Disk: $M = 3.0\,kg$ $R = 2cm = 0.02m$

what is α?



Principle? $\Sigma \tau = I\alpha$

F_1 causes a torque $\tau_1 = +F_1 R = 0.40\ N\cdot m$ (counterclockwise)

F_2 causes a torque $\tau_2 = -F_2 R = -0.60\ N\cdot m$ (clockwise)

$I = \frac{1}{2}MR^2 = \frac{1}{2}(3.0\,kg)(0.02m)^2 =$

$I = 0.00060\,kg\,m^2 = 6.0\times10^{-4}\,kg\,m^2$

$\Sigma \tau = I\alpha$

$F_1 R - F_2 R = I\alpha$

$0.40\,Nm - 0.60\,Nm = (6.0\times10^{-4}\,kg\,m^2)\,\alpha$

$\boxed{\alpha = -333\,rad/s^2}$