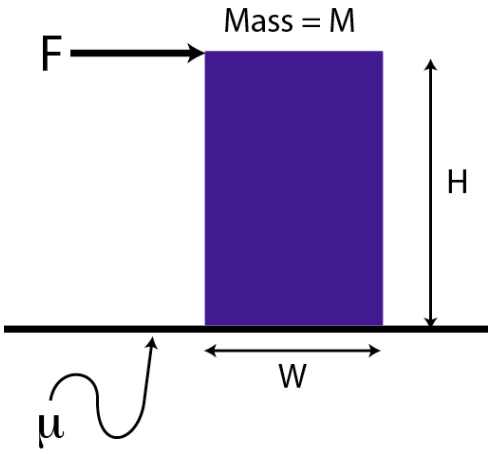
Consider two vectors $\vec{\mathbf{r}} = x\hat{\mathbf{i}}$ with $x > 0$ and $\vec{\mathbf{F}} = F_x\hat{\mathbf{i}} + F_z\hat{\mathbf{k}}$ with $F_x > 0$ and $F_z > 0$. The torque points in the:

1) + x-direction
2) – x-direction
3) + y-direction
4) –y-direction
5) + z-direction
6) –z-direction
7) None of the above directions

A 1 kg rock is suspended by a massless string from one end of a 1 m measuring stick. What is the mass of the measuring stick if it is balanced by a support force at 0.25 m from the left end?

1) 0.25 kg.
2) 0.5 kg.
3) 1.0 kg.
4) 2.0 kg.
5) 4.0 kg.
6) Impossible to determine.



1) How big can F be before it ***slips***?
2) How big can F be before it ***tips***?
3) Which one happens first?