

# Equilibrium

## Conditions for Equilibrium

□  $\Sigma F = 0$  Translational EQ (Center of Mass)

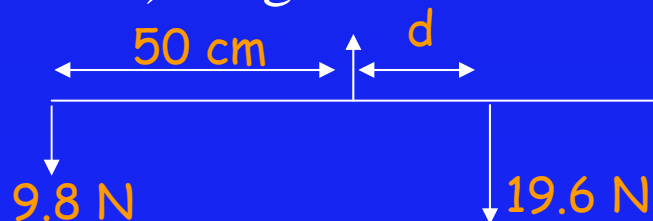
□  $\Sigma \tau = 0$  Rotational EQ (True for any axis!)

» Choose axis of rotation wisely!

○ A meter stick is suspended at the center. If a 1 kg weight is placed at  $x=0$ . Where do you need to place a 2 kg weight to balance it?

A)  $x = 25$     B)  $x=50$     C)  $x=75$     D)  $x=100$

E) 1 kg can't balance a 2 kg weight.



$$\Sigma \tau = 0$$

$$9.8 (0.5) - (19.6)d = 0$$

$$d = 25$$

Balance Demo