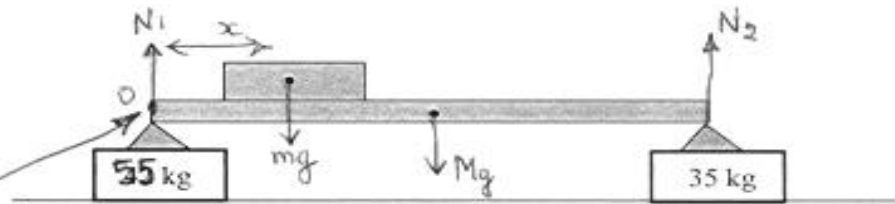


Physics 101-Rec
Quiz # 11

Instructor: Dr. Mekki

Name: Key Id#: _____ Sect. #: _____

Two scales are 3.0 m apart. A uniform 50 kg beam of the same length is placed on top of them. A 40 kg block is placed on the beam after which the right scale reads 35 kg and the left scale reads 42 kg. How far from the right scale is the center of gravity of the block located?



$$\tau_o = N_2 l - mg x - Mg \frac{l}{2} = 0$$

$$\Rightarrow x = \frac{-Mg \frac{l}{2} + N_2 l}{mg} = \frac{-(50 \times 9.8 \times 1.5) + (35 \times 9.8 \times 3)}{9.8 \times 40}$$

$$\boxed{x = 0.75 \text{ m}} \text{ measured from the left.}$$

(see the figure)