

Physics 101-Rec
Quiz # 11

Instructor: Dr. Mekki

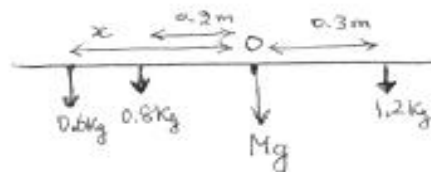
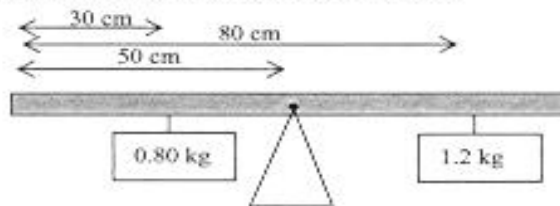
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Key

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A horizontal uniform meter stick is supported at the 50-cm mark. A mass of 0.80 kg is hanging from it at the 30-cm mark and a 1.2 kg mass is hanging from it at the 80-cm mark. Determine the position on the meter stick at which one would hang a third mass of 0.50 kg to keep the meter stick balanced (zero is at the left).



$$\tau_o = (0.8 \times 9.8) \times 0.2 + (0.5 \times 9.8) \times x - (1.2 \times 9.8) \times 0.3 = 0$$

$$\Rightarrow x = \frac{0.36 - 0.16}{0.5} = 0.4 \text{ from the point O.}$$

From the zero of the meter stick (left) it is

$$x = 0.5 - 0.4 = \boxed{0.1 \text{ m}}$$