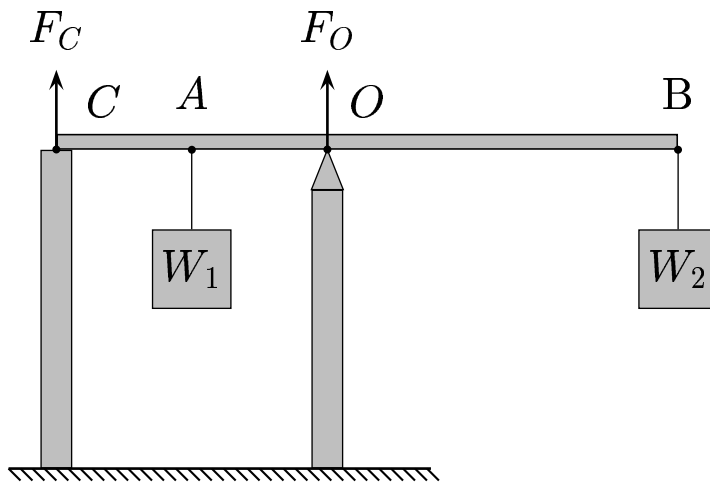


Given:  $W_1 = 1000 \text{ N}$ ,  $\overline{CA} = \overline{AO} = \frac{L}{4}$ , and  $\overline{OB} = \frac{L}{2}$ .

Vary  $W_2$  such that the supporting force  $F_c = 0$ .



At this moment,  $W_2$  is given by

- A)  $W_2 = 500 \text{ N}$ .
- B)  $W_2 = 1000 \text{ N}$ .
- C)  $W_2 = 1500 \text{ N}$ .

When  $F_c = 0$ , at equilibrium about the point O, the clockwise torque equals the counterclockwise torque, *i.e.*

$$W_1 \frac{L}{4} = W_2 \frac{L}{2},$$

which implies  $W_2 = \frac{W_1}{2} = 500 \text{ N}$ .

**Answer A.**

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