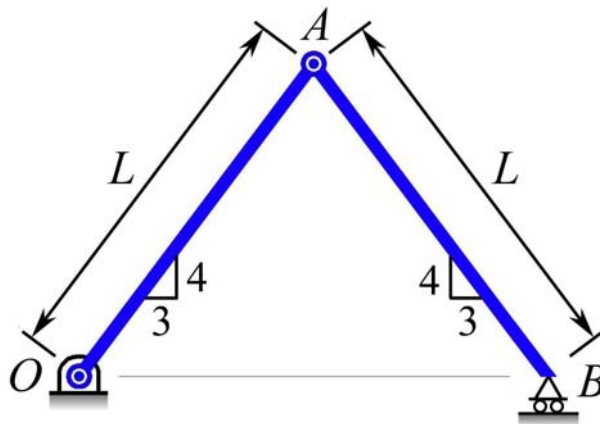


MEEG 2013 Quiz #6

Two slender bars OA and AB , each of weight $W = 10$ lb, are released from rest in the position shown. The angular acceleration of bar OA upon release is $\alpha_{OA} = 2 \text{ rad/s}^2 \curvearrowright$. Using method of force and acceleration, determine (a) the reaction \mathbf{B}_y at B upon release, (b) the length L in feet.



$FBD = EFD$ for the entire system: ②

$FBD = EFD$ for bar AB : ②

$$B_y = \frac{217W}{292} = 7.4315 \quad \mathbf{B}_y = 7.43 \text{ lb } \uparrow \quad ③$$

$$L = \frac{45g}{146\alpha} = 4.9623 \quad \mathbf{L} = 4.96 \text{ ft} \quad ③$$