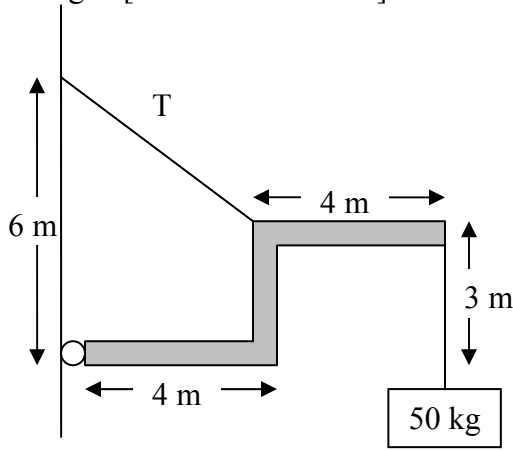


**W4.04****Static Equilibrium – Bent Bar - KEY**

[1] The bar below is in static equilibrium. Find the mass of the bar and the forces exerted by the hinge. [Given  $T = 2000 \text{ N}$ .]



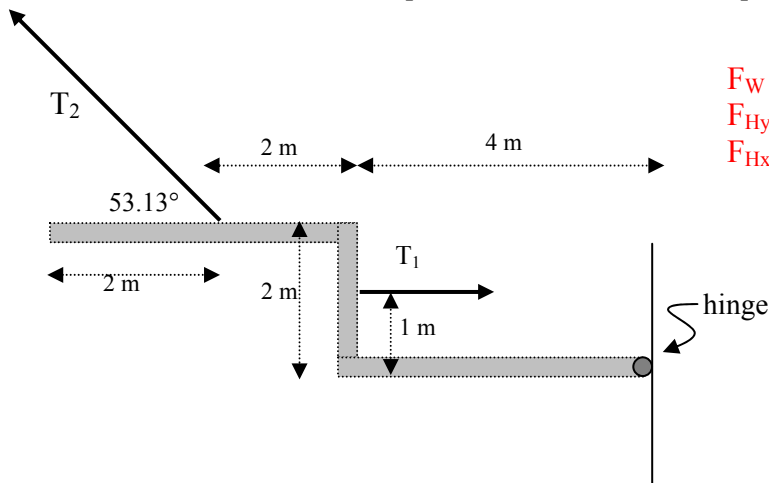
$$m = 140 \text{ kg}$$

$$F_{Hy} = 700 \text{ N (up)}$$

$$F_{Hx} = 1600 \text{ N (right)}$$

[2] The bar below is in static equilibrium. Find the weight of the bar, the force of the hinge in the vertical direction, and the force of the hinge in the horizontal direction.

[Given:  $T_1 = 20 \text{ N}$   $T_2 = 50 \text{ N}$ ]



$$F_w = 50 \text{ N}$$

$$F_{Hy} = 10 \text{ N (up)}$$

$$F_{Hx} = 10 \text{ N (right)}$$