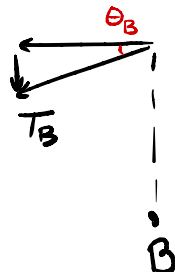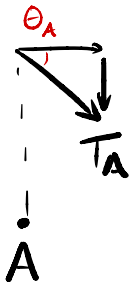A non-communicating calculator is allowed. Full credit will only be given if all steps used are clearly communicated (free body diagrams, algebra, etc).

A tightrope walker is attempting a walk across a 50 meter span 20 meters above the ground. When he is 20% across the span, the rope is deflected such that he is 17 meters above the ground. At this point the tension in the cable behind and ahead of the walker is 1,041.1 N and 1,000.0 N, respectively.
Find the moments caused by the cable tension about points A and B (where the support posts meet the ground).

FBD
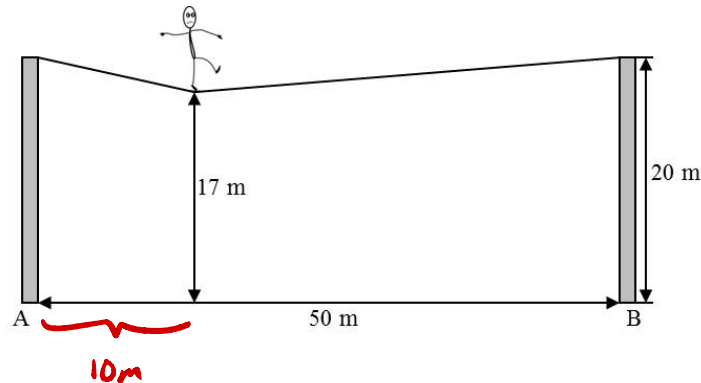
$$T_A = 1041 N$$
$$T_B = 1000 N$$
$$\theta_A = atan\left(\frac{3}{10}\right) = 16.7°$$
$$\theta_B = atan\left(\frac{3}{40}\right) = 4.29°$$

Moments

$$\circlearrowleft +$$

$$\Sigma M_A = -T_A \cos\theta_A \cdot (20m)$$

$$\boxed{= -19,944 \; N\cdot m}$$

$$\circlearrowleft +$$

$$\Sigma M_B = T_B \cos(\theta_B) \cdot (20m)$$

$$\boxed{= 19,944 \; N\cdot m}$$