# Question 7

A 12 in by 24 in flat steel sign is supported by two cables, each 6 inches from the edge of the sign. The sign has a weight of 10 lbs, and the wind is causing the sign to sit at an angle of 10 degrees from vertical (the y axis). If we treat the wind as a point force acting in the negative z direction on the center of the sign, how strong must the wind force be to cause this ten degree angle?
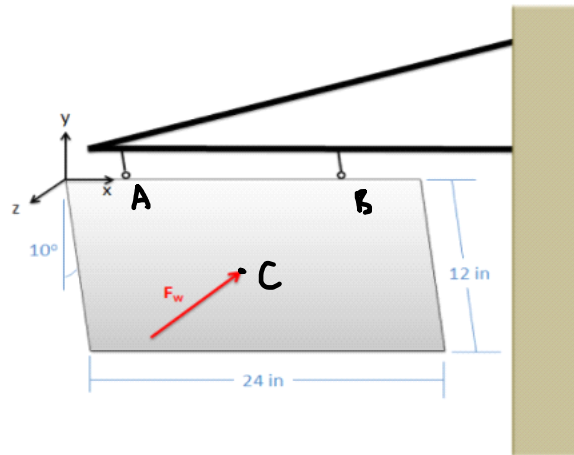
Side View
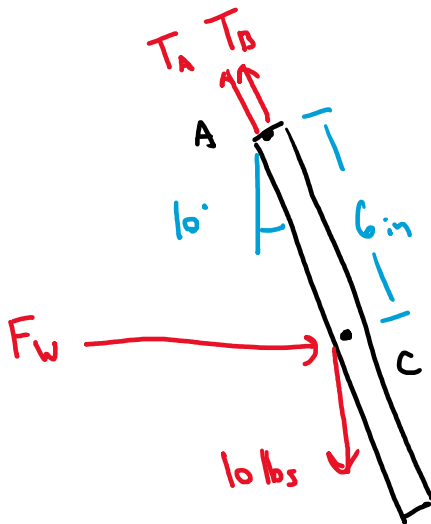
$$\sum M_A = (F_w)(6 \cos(10)) - (10)(6 \sin(10)) = 0$$

$$F_w = \frac{(10)(6 \sin(10))}{6 \cos(10)}$$

$$\boxed{F_w = 1.76 \text{ lbs}}$$