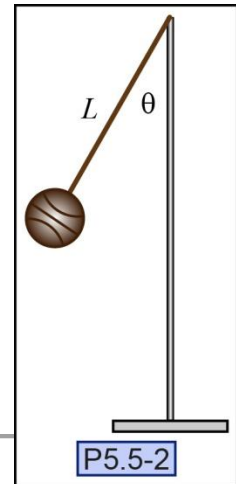


P5.5-2)^{fe} After being struck, a tether ball travels in a horizontal circular path around the pole. If the length of the rope is $L = 6$ ft, the weight of the ball is 10 oz and the angle that the rope makes with the pole is a constant $\theta = 20^\circ$, determine the velocity of the ball and the tension in the rope.

Given:

Find:



Solution:

FBD

Draw a free-body diagram of the tether ball. Remember to include a coordinate system.

Equation of Motion

Determine the tension in the rope.

$$T = \underline{\hspace{2cm}}$$

Determine the velocity of the ball.

$$v = \underline{\hspace{2cm}}$$