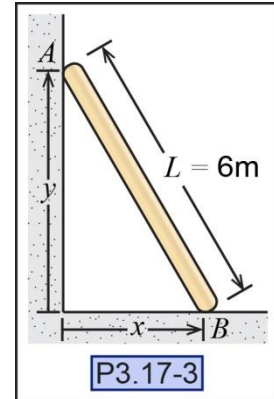**P3.17-3)** Consider the 6 m long ladder shown. If point A of the ladder contacting the wall is sliding down with a constant velocity of 6 m/s, then determine the acceleration of point B of the ladder contacting the floor at the instant when y is equal to 2 m.

Given:

Find:

P3.17-3

Solution:

Position equation

Write down the position of point B in terms of the position of point A.

$x(y) = $ _____

Velocity

Take the first time derivative of the above equation.

$\dot{x} = $ _____

Acceleration

Take the second time derivative of x.

$\ddot{x} = $ _____

What is the acceleration of point B when $y = 2$ m

$\ddot{x}_{y=2} = $ _____