The fire truck us moving forward at a speed of 35 MPH and is decelerating at a rate of 10ft/sec.^2. Simultaneously, the ladder is being raised and extended.

B A

20’

Ø

Fire Truck Vb, ab

At the instant considered the angle Ø is 30° and is increasing at a rate of 10 degrees/sec . Also at this instant the extension b of the ladder is 5 ft and Vb = 2 feet / sec and ab = -1 ft/sec^2. Where Vb is the rate of extension of part b in ft/sec and ab is the acceleration of the extension of part b in ft/sec^2.

Find the acceleration of point A with

1. Respect to the truck
2. Respect to the ground