PROB. 11-143

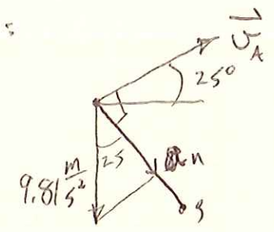
$v_A = 50 \frac{m}{s}$, $\theta = 25°$

FIND ρ AT POINT A AND AT THE HIGHEST POINT.

AT POINT A:

$a_n = \frac{v^2}{\rho}$, $\rho = \frac{v^2}{a_n} = \frac{(50 \frac{m}{s})^2}{(8.891 \frac{m}{s^2})} = 281^m$

* FIND a_n:



$a_n = 9.81 \cos 25°$

$a_n = 8.891 \frac{m}{s^2}$

AT THE HIGHEST POINT: $a_n = 9.81 \frac{m}{s^2}$

AT POINT A, $\vec{v}_A = (50 \cos 25)\hat{i} + (50 \sin 25)\hat{j}$

$\vec{v}_A = (45.31)\hat{i} + (21.13)\hat{j} \frac{m}{s}$

AT ANY POINT IN THE TRAJECTORY, $v_x = (v_x)_0$

$v_n = 45.31 \frac{m}{s}$

$\rho = \frac{(45.31 \frac{m}{s})}{(9.81 \frac{m}{s^2})} = 209.3^m$