P3.4-2) A projectile is launched on level terrain with an initial velocity of v_o at an angle of θ with the horizontal. Determine the time of flight (t_C), the range (R), and the maximum attained height (H) of the projectile.

   a) v_o = 10 mph, θ = 25°
   b) v_o = 15 mph, θ = 30°
   c) v_o = 30 mph, θ = 35°
   d) v_o = 40 mph, θ = 15°

Given:

Find:

Solution:

Draw the flight of the project.

Label the important points of the flight and include a coordinate axis.

Calculate the range.

Initial velocity

R = _____

Maximum Height

$\mathbf{v}_0$ = _____ $\mathbf{i}$ + _____ $\mathbf{j}$

Total flight time

t_C = _____

H = _____