

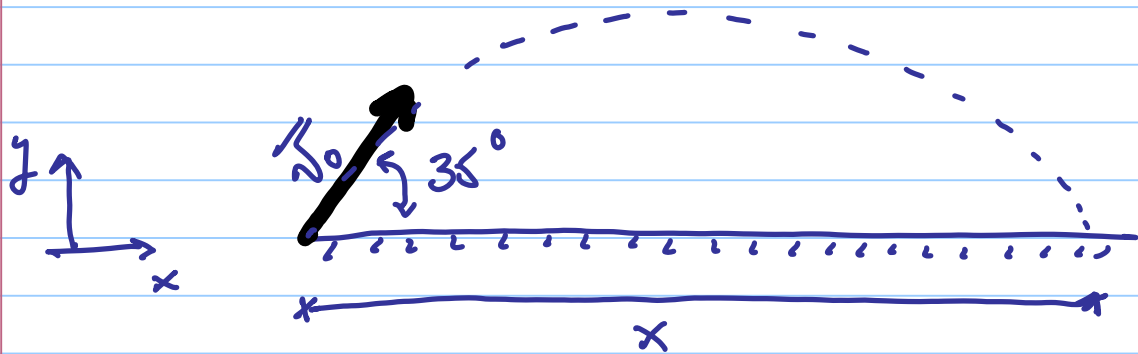
# APPLICATION P-181

Note Title

5/9/2010

A PROJECTILE IS LAUNCHED AT THE ANGLE  $35^\circ$  FROM THE HORIZONTAL WITH VELOCITY EQUAL TO  $30 \text{ m/s}$ .

DETERMINE HOW FAR FROM THE LAUNCH SITE THE PROJECTIVE WILL LAND.



NEGLECTING AIR RESISTANCE :

$$x(t) = v_{0x} t$$

$$y(t) = v_{0y} t + \frac{1}{2} g t^2$$

FINAL  $y$  VALUE IS ZERO :

$$v_{0y} t + \frac{1}{2} g t^2 = 0$$

THEN

$$t = \frac{-2v_{0y}}{g}$$

TIME OF  
FLIGHT.

Maximum HEIGHT :

$$t_{\text{max}} = \frac{1}{2} \text{ TIME OF FLIGHT}$$

$$h_{\text{max}} = v_{0y} \left( \frac{t}{2} \right) + \frac{1}{2} g \left( \frac{t}{2} \right)^2$$



