

# Total Time of Flight of a Projectile

Recall that only the vertical component of motion is influenced by gravity, and that the vertical and horizontal components of motion can be considered independently of each other. If a projectile of mass  $m$  is launched with an initial speed  $v_0$  (with components  $v_{0x}$  and  $v_{0y}$  along the horizontal and vertical directions, respectively), its total time of flight (assuming launch height = final height) is:

a.)  $\left(\frac{2v_{0y}}{g}\right)$    b.)  $\left(\frac{v_{0y}}{g}\right)$    c.)  $\left(\frac{2v_0}{g}\right)$    d.)  $\left(\frac{mv_{0y}}{g}\right)$    e.)  $\left(\frac{v_0}{g}\right)$