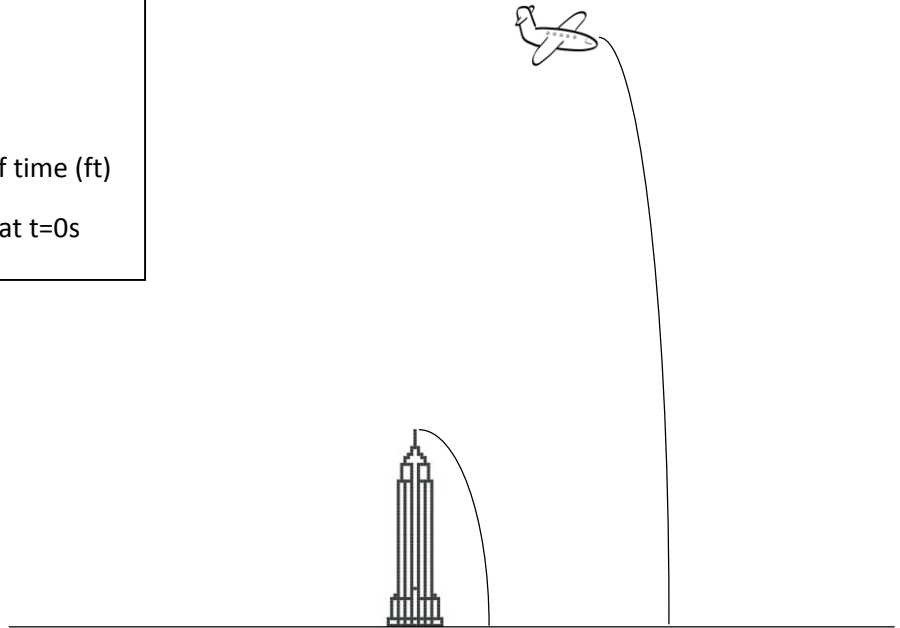


2.) A penny is dropped from the empire state building and a penny is also dropped from a plane 35000 feet above the ground. How long after the penny from the plane is dropped will the penny from the empire state building need to be dropped in order for the two pennies to hit the ground at the same time? (Ignore the effects of air resistance) What will the velocity of each penny be when it hits the ground?

Formulas you will need $h(t) = -16t^2 + v_0t + h_0$ and $v(t) = -16t + v_0$

Hints: t =time(s)
 v_0 =initial velocity (0ft/s if dropped)
 h_0 =initial height above the ground (ft)
 $h(t)$ =height of penny after t amount of time (ft)
The penny from the plane is dropped at $t=0$ s



Blank lined area for student response.