Answer on question #46907, Physics

$t_1 = 3\,min = 3 \cdot 60\,sec$

$t_2 = 2 \cdot 60\,sec$

$V_2 = V_1 + 750\,mi/hour = V_1 + 335.28\,m/sec$

$h = V_1 \cdot t_1 - \frac{g}{2} \cdot t_1^2 = V_2 \cdot t_2 - \frac{g}{2} \cdot t_2^2$

$V_1 \cdot t_1 - \frac{g}{2} \cdot t_1^2 = (V_1 + 335.28) \cdot t_2 - \frac{g}{2} \cdot t_2^2$

$$V_1 = \frac{335.28 \cdot t_2}{(t_1 - t_2)} + \frac{\frac{g}{2} \cdot (t_1^2 - t_2^2)}{(t_1 - t_2)} = \frac{335.28 \cdot t_2}{(t_1 - t_2)} + \frac{g}{2} \cdot (t_1 + t_2)$$

$V_1 = 2140.56\,m/sec$

$V_2 = 2475.84\,m/sec$