Datos

$a = 5\ m/s^2$

$g = 9,81\ m/s^2$

$t_0 = 0s$

$V_0 = 0m/s$

c = constante

hmax = altura maxima

$$g = \frac{dv}{dt}$$

$$\frac{dv}{dt} = g$$

$$dv = g \cdot dt$$

$$\int dv = \int g \cdot dt$$

$$V = gt + C \quad *$$

$$V_0 = gt + C_1$$

$$5\frac{m}{s} = 9,81\frac{m}{s^2} \cdot 0 + C_1 \rightarrow 5\frac{m}{s} = 0 + C_1 \rightarrow C_1 = 5\frac{m}{s}$$

$$V = 5 + 9,81\frac{m}{s^2} \cdot t$$

$$\frac{dy}{dt} = 5 + 9,81\frac{m}{s^2} \cdot t$$

$$dy = (5 + 9,81\frac{m}{s^2} \cdot t)$$

$$\int dy = \int (5 + 9.81\frac{m}{s^2} \cdot t) \cdot dt$$

$$y = 5t + \frac{gt^2}{2} \quad \left\{ y = 5t + \frac{9,81\ m/s^2 \cdot t^2}{2} \right\} \quad hmax = y$$

$$y = \frac{25}{9,81\ m/s^2} - \frac{9,81\ m/s^2}{2} \cdot \left(\frac{5\ m/s}{9.81\ m/s^2}\right)^2$$

$$y = \frac{25}{9.81\ m/s^2} - \frac{25}{2(9.81\ m/s^2)}$$

$$y = \frac{25}{2(9,81\ m/s^2} m$$

$$y = 1,27\ m$$

a) $hmax = 1,27\ m$

$*V = -gt + C_1$

$V = 5 - gt$

$V_f = 5 - gt$

$0 = 5 - gt$

$t = \frac{5\ m/s}{9,81\ m/s^2}$

$-gt =$ ↑ sube

$+gt =$ ↓ baja

ºxº

b) $y = 5t + \frac{9,81 m/s^2}{2} \cdot t^2$

$\frac{9,81 m/s^2}{2} \cdot t^2 + 5t = 1,27 m$

$\frac{9,81 m/s^2}{2} \cdot t^2 + 5t - 1,27 m = 0$

$t = 0,21 s$ } Tiempo de vuelo

d) $V_F = 0 m/s$

c) $x = V_0 \cdot t + \frac{g}{2} \cdot t^2$

x	F(t)

$f(t) = V_0 \cdot t + \frac{g}{2} \cdot t^2$

$f(t) = \frac{g}{2} \cdot t^2$