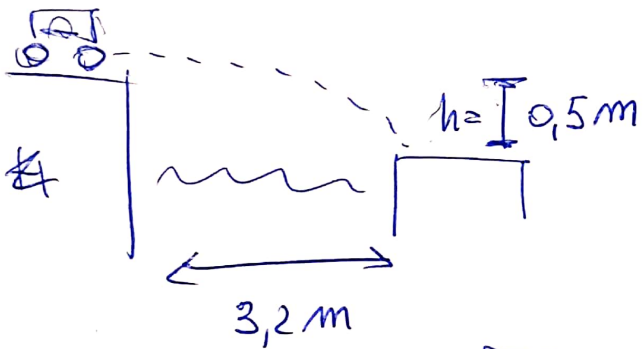


LO STONTMAN

FILA m 1
SIMULAZIONE



$$h = \frac{1}{2}gt^2 \rightarrow t = \sqrt{\frac{2h}{g}} = 0,319 \text{ s}$$

$$x = vt \rightarrow v = \frac{x}{t} = \frac{3,2 \text{ m}}{0,319 \text{ s}} = 10,02 \frac{\text{m}}{\text{s}}$$

$$\left(\text{in } \frac{\text{km}}{\text{h}} \quad v = \frac{10 \frac{\text{m}}{\text{s}} \cdot 3,6}{1} = 36 \frac{\text{km}}{\text{h}} \right)$$

CALCOLATORE DI GOLF

FILA n 2
SITUAZIONE



$$\alpha = 42^\circ \quad t_{\text{volo}} = 1,37 \text{ s}$$
$$t_{\text{volo}} = \frac{2 v_{0y}}{g} \quad x_G = ?$$

$$v_{0x} = 8 \frac{\text{m}}{\text{s}}$$

$$v_{0y} = 6 \frac{\text{m}}{\text{s}}$$

$$v_{0y} = \frac{g t_{\text{volo}}}{2} = \frac{9,8 \frac{\text{m}}{\text{s}^2} \cdot 1,37 \text{ s}}{2} = 6,713 \frac{\text{m}}{\text{s}}$$

$v_0 \neq 10$

$$v_{0y} = v_0 \sin \alpha$$

$$v_0 = \frac{v_{0y}}{\sin \alpha} = \frac{6,713 \frac{\text{m}}{\text{s}}}{\sin 42^\circ} = 10,03 \frac{\text{m}}{\text{s}}$$

$$g_{\text{max}} = \frac{v_{0y}^2}{2g} = \frac{\left(6,713 \frac{\text{m}}{\text{s}}\right)^2}{2 \cdot 9,8 \frac{\text{m}}{\text{s}^2}} = 2,3 \text{ m}$$

$$g_{\text{hole}} \quad x_g = \frac{2 v_{0x} v_{0y}}{g} = \frac{2 v_0 \cos \alpha \cdot v_0 \sin \alpha}{g} = \frac{2 \cdot 10 \frac{\text{m}}{\text{s}} \cdot \cos 42^\circ \cdot 6,713 \frac{\text{m}}{\text{s}}}{9,8 \frac{\text{m}}{\text{s}^2}}$$

$$x_g = 10,18 \text{ m}$$

SITUAZ. M 3

ROTAZIONE TERRESTRE attorno al proprio asse

$$T = 24 \text{ ore}$$

$$R = 6370 \text{ km}$$

$$V = \frac{2\pi R}{T} = \frac{2\pi \cdot 6370 \cdot 10^3 \text{ m}}{24 \cdot 3600 \text{ s}} = 463,2 \frac{\text{m}}{\text{s}}$$

$$a_c = \frac{V^2}{R} = \frac{(463 \frac{\text{m}}{\text{s}})^2}{6370 \cdot 10^3 \text{ m}} = 0,0337 \frac{\text{m}^2}{\text{s}^2} \cdot \frac{1}{\text{m}}$$

$$a_c = 0,0337 \frac{\text{m}}{\text{s}^2}$$

$$\omega = \frac{2\pi}{T} = \frac{2\pi}{24 \cdot 3600 \text{ s}} = 7,27 \cdot 10^{-5} \frac{\text{rad}}{\text{s}}$$

AUTODIABIS IN CURVA

FILA M L
simulata

$$R = 31 \text{ m}$$

$$a = 20 \text{ m/s}^2$$

$$V_{\text{max}} = ?$$

$$a = \frac{v^2}{R} \rightarrow v = \sqrt{aR} = \sqrt{\frac{20 \text{ m}}{\text{s}^2} \cdot 31 \text{ m}} = \sqrt{620 \frac{\text{m}^2}{\text{s}^2}} = 24,9 \frac{\text{m}}{\text{s}}$$