

semang=26

Datos ① lanzamiento horizontal.

80 metros

$$V_0 = 30 \text{ m/s}$$

$$g = 9.8 \text{ m/s}^2$$

A)

$$t = \sqrt{\frac{2y}{g}}$$

$$t = \sqrt{\frac{2(80 \text{ m})}{9.8 \text{ m/s}^2}}$$

$$t = 4.045 \text{ seg}$$

B)  $x = V_0 \cdot t$   $x = 30 \text{ m/s} \cdot 4.045 \text{ seg}$

$$x = 121.35 \text{ m}$$

C)  $V_y = g \cdot t$   $V_y = 9.8 \text{ m/s}^2 \cdot 4.045 \text{ seg}$

$$V_y = 39.59 \text{ m/s}$$

$$V_R = \sqrt{V_x^2 + V_y^2}$$

$$\left\{ \frac{x = V_0 t}{t} \right\}$$

$$V_R = \sqrt{(30 \text{ m/s})^2 + (39.59 \text{ m/s})^2}$$

$$V_R = 49.67 \text{ m/s}$$



Datos.

$$V_0 = 198 \text{ km/h} = 55 \text{ m/s}$$

$$y = 312 \text{ metros}$$

$$g = 9.8 \text{ m/s}^2$$

$$A) t = \sqrt{\frac{2y}{g}}$$

$$t = \sqrt{\frac{2(312 \text{ m})}{9.8 \text{ m/s}^2}} \quad t = 8 \text{ seg}$$

$$B) x = V_0 x \cdot t$$

$$x = 55 \text{ m/s} \cdot 8 \text{ seg}$$

$$x = 440 \text{ m}$$

$$C) = V_y = g \cdot t$$

$$V_y = 9.8 \text{ m/s}^2 \cdot 8 \text{ seg}$$

$$V_y = 78.4 \text{ m/s}$$

$$V_R = \sqrt{V_x^2 + V_y^2}$$

$$V_R = \sqrt{(55 \text{ m/s})^2 + (78.4 \text{ m/s})^2}$$

$$V_R = 95.77 \text{ m/s}$$



Notes.

③  $V_0 = 80 \text{ m/s}$   
 $y = 120 \text{ m}$   
 $g = 9.8 \text{ m/s}^2$

A)  $t = \sqrt{\frac{2y}{g}}$        $t = \sqrt{\frac{2(120 \text{ m})}{9.8 \text{ m/s}^2}}$        $t = 4.95 \text{ sec}$

B)  $x = V_0 \cdot t$        $x = 80 \text{ m/s} \cdot 4.95 \text{ sec}$   
 $x = 396 \text{ m}$

④ Notes.

$V_0 = 140 \text{ m/s}$   
 $y = 1400 \text{ m}$   
 $g = 9.8 \text{ m/s}^2$        $t = \sqrt{\frac{2y}{g}}$        $t = \sqrt{\frac{2(1400 \text{ m})}{9.8 \text{ m/s}^2}}$        $t = 16.90 \text{ sec}$

B)  $x = V_0 \cdot t$        $x = 140 \text{ m/s} \cdot 16.90 \text{ sec} = x = 2366 \text{ m}$

C)  $V_y = g \cdot t = V_y = 9.8 \text{ m/s}^2 \cdot 16.90 \text{ sec} = V_y = 166 \text{ m/s}$

$V_R = \sqrt{V_x^2 + V_y^2}$

$V_R = \sqrt{(140 \text{ m/s})^2 + (166 \text{ m/s})^2}$

$V_R = 217.75 \text{ m/s}$



## Datos - ⑤ Tiro parabólico.

$$V_0 = 20 \text{ m/s}$$

$$\theta = 50^\circ$$

$$g = -9.8 \text{ m/s}^2$$

$$V_{0x} = V_0 \cos \theta$$

$$V_{0x} = 20 \text{ m/s} \cos 50^\circ$$

$$V_{0x} = 12.86 \text{ m/s}$$

$$V_{0y} = V_0 \sin \theta$$

$$V_{0y} = 20 \text{ m/s} \sin 50^\circ$$

$$V_{0y} = 15.32 \text{ m/s}$$

$$A) TV = 2T$$

$$TV = 2(1.56 \text{ seg})$$

$$T = -\frac{V_{0y}}{g}$$

$$TV = 3.12 \text{ seg}$$

$$T = \frac{-15.32 \text{ m/s}}{-9.8 \text{ m/s}^2}$$

$$C) X_{\text{MAX}} = V_{0x} \cdot TV$$

$$X_{\text{MAX}} = 12.86 \text{ m/s} \cdot 3.12 \text{ seg}$$

$$X_{\text{MAX}} = 40.12 \text{ m}$$

$$T = 1.56 \text{ seg}$$

$$B) y = V_{0y} \cdot t + \frac{gt^2}{2}$$

$$y = (15.32 \text{ m/s})(1.56 \text{ seg}) + \frac{(-9.8 \text{ m/s}^2)(1.56 \text{ seg})^2}{2}$$

$$y = 23.90 \text{ m} - 11.90 \text{ m}$$

$$y = 11.98 \text{ m}$$

$$D) X_{\text{MAX}} = V_{0x} \cdot TV$$

$$X_{\text{MAX}} = (12.86 \text{ m/s}) \cdot (3.12 \text{ seg})$$

$$X_{\text{MAX}} = 40.12 \text{ m}$$



Dato 5. ⑤

$$V_0 = 30 \text{ m/s}$$

$$\theta = 40^\circ$$

$$g = -9.8 \text{ m/s}^2$$

$$V_{0x} = V_0 \cos \theta$$

$$V_{0x} = 30 \text{ m/s} \cos 40^\circ$$

$$V_{0x} = 22.98 \text{ m/s}$$

$$V_{0y} = V_0 \sin \theta$$

$$V_{0y} = 30 \text{ m/s} \sin 40^\circ$$

$$V_{0y} = 19.28 \text{ m/s}$$

$$A_x = TV = 2T_y$$

$$TV = 2 / 1.97 \text{ seg}$$

$$TV = \underline{3.94 \text{ seg}}$$

$$B / T_y = \frac{-V_{0y}}{-g}$$

$$T_y = \frac{-19.28 \text{ m/s}}{-9.8 \text{ m/s}^2}$$

$$T_y = \underline{1.97 \text{ seg}}$$

$$D = \cancel{x} \text{ Max} = V_{0x} \cdot TV$$

$$x \text{ Max} = (22.98 \text{ m/s}) / (3.94 \text{ seg})$$

$$x \text{ Max} = 90.59 \text{ m}$$

$$d = y = V_{0y} \cdot t + \frac{gt^2}{2}$$

$$y = (19.28 \text{ m/s}) / (1.97 \text{ seg}) + \frac{(9.8 \text{ m/s}^2) / (1.97)^2}{2}$$

$$y = 37.98 \text{ m} - 19.02 \text{ m}$$

$$y = \underline{18.96 \text{ m}}$$



Datos. M.C.U.

7 10 m/s  
Radio = 50 m

$$a_c = \frac{v^2}{R}$$

$$a_c = \frac{(10 \text{ m/s})^2}{50 \text{ m}}$$

$$a_c = 2 \text{ m/s}^2$$

8 datos.  
30 m/s

Radio = 0.40 m

$$\omega = \frac{v}{R}$$

$$\omega = \frac{30 \text{ m/s}}{0.40 \text{ m}} =$$

$$\omega = 75 \text{ Rad/seg}$$

9 Datos.

Encontrar la velocidad lineal

$$v = \omega \cdot \text{Radio} \quad v = \omega \cdot R$$

$$v = (75 \text{ Rad/seg}) (0.40 \text{ m})$$

$$v = 30 \text{ m/s}$$



Datos

90) Encontrar período.

$$T = \frac{2\pi}{\omega}$$

$$T = \frac{2\pi}{75 \text{ Rad/sec}}$$

$$\underline{T = 0.027 \text{ seg}}$$