

Física Semana 2.

① $V_{ox} = 30 \text{ mts/seg}$ $V = 80 \text{ mts}$ $g = 9.8 \text{ mts/s}^2$

a) $t = \frac{\sqrt{(2)Y}}{g}$

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

$$t = \sqrt{16.33 \text{ s}^2} = 4.04 \text{ seg}$$

b) $X = V_{ox} t$

$$X = 30 \text{ mts/s} \times 4.04 = 121.2 \text{ mts} //$$

2) $V_{ox} = 198 \text{ km/h}$ $Y = 312 \text{ mts}$ $g = 9.8 \text{ mts/s}^2$

a) $t = \frac{\sqrt{(2)Y}}{g}$

$$t = \frac{\sqrt{(2)312 \text{ mts}}}{9.8 \text{ mts/s}^2}$$

$$t = \sqrt{63.67 \text{ s}^2} = 7.98 \text{ seg.}$$

b) $X = V_{ox} t$

$$\frac{198}{1} = \frac{1000 \text{ mts}}{1} + \frac{1}{3,600 \text{ s}} = \frac{198,000 \text{ mts}}{3,600 \text{ seg}}$$

$$= 55 \text{ mts/s}$$

$$X = 55 \text{ mts/s} \times 7.98 \text{ seg} = 438.9 \text{ mts} //$$

$$3) X = 90 \text{ mts} \quad Y = 100 \text{ mts} \quad g = 9.8 \text{ mts/s}^2$$

$$a) t = \sqrt{\frac{(2)(100 \text{ mts})}{9.8 \text{ mts/s}^2}}$$

$$t = \sqrt{20.40 \text{ mts/s}^2} = 4.51 \text{ seg}$$

$$b) V_{ox} = \frac{X}{t}$$

$$V_{ox} = 90 \text{ mts} \div 4.51 \text{ seg} = 19.96 \text{ mts/seg}$$

$$4) V_{ox} = 520 \text{ pies/s} \quad t = 7 \text{ seg} \quad g = 32.2 \text{ pies/s}^2$$

$$a) \text{ altitud a la que vuela el avión}$$

$$Y = g t^2 \div 2$$

$$Y = \frac{32.2 \text{ pies/seg}^2 (7 \text{ seg})^2}{2}$$

$$Y = 1,577.8 \text{ pies} = Y = 788.9 \text{ pies}$$

$$b) \text{ cual es su alcance horizontal}$$

$$X = V_{ox} t$$

$$X = 520 \text{ pies/seg} \times 7 \text{ seg} = 3,640 \text{ pies}$$

$$5) Y = 30 \text{ mt} \quad V_{0x} = 12 \text{ m/s} \quad g = 9.8 \text{ m/s}^2$$

$$a) X = ?$$

$$X = V_{0x} \times T$$

$$T = \sqrt{\frac{(2)(30 \text{ mt})}{9.8 \text{ m/s}^2}}$$

$$T = \sqrt{6.12 \text{ s}^2}$$

$$= 2.47 \text{ seg}$$

$$X = 12 \text{ m/s} \times 2.47 \text{ seg}$$

$$= 29.64 \text{ mts} //$$

$$6) V_{0x} = 90 \text{ m/s} \quad Y = 28 \text{ mts} \quad g = 9.8 \text{ mt/seg}^2$$

$$a) t = \sqrt{\frac{(2)Y}{g}}$$

$$t = \sqrt{\frac{(2) 28 \text{ mts}}{9.8 \text{ mt/s}^2}}$$

$$t = \sqrt{5.71 \text{ s}^2} = 2.38 \text{ seg}$$

$$b) X = V_{0x} \times T$$

$$X = 90 \text{ m/s} \times 2.38 \text{ seg} = 214.2 \text{ mts} //$$

$$7) c) V_x = V_{0x} = 90 \text{ m/s}$$

$$V_y = gt$$

$$V_y = 9.8 \text{ m/s}^2 \times 2.38 \text{ s} = 23.32 \text{ m/s}$$

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

$$V_R = \sqrt{(90 \text{ m/s})^2 + (23.32 \text{ m/s})^2}$$

$$V_R = \sqrt{8,643} \text{ m/s}^2$$

$$= 92.97 \text{ m/sec}$$

$$7) V = 1.2 \text{ m/s} \quad X = 1.53 \text{ m/s} \quad g = 9.8 \text{ m/s}^2$$

$$a) t = \sqrt{\frac{2Y}{g}}$$

$$t = \sqrt{\frac{(2)(1.2 \text{ m/s})}{9.8 \text{ m/s}^2}}$$

$$t = \sqrt{0.24 \text{ sec}^2} = 0.49 \text{ sec}$$

$$b) V_{0x} = X \div t$$

$$V_{0x} = \frac{1.53 \text{ m/s}}{0.44 \text{ sec}} = 3.12 \text{ m/s}^2 //$$

$$8) Y = 20 \text{ m/s} \quad X = 24 \text{ m/s} \quad g = 9.8 \text{ m/s}^2$$

$$a) t = \sqrt{\frac{2Y}{g}} = t = \sqrt{\frac{(2)(20 \text{ m/s})}{9.8 \text{ m/s}^2}}$$

$$t = \sqrt{4.08 \text{ sec}^2} \quad 2.02 \text{ sec}$$

$$V_{0x} = \frac{X}{t}$$

$$V_{0x} = \frac{24 \text{ m/s}}{2.02 \text{ sec}}$$

$$V_{0x} = 11.88 \text{ m/s} //$$