

$$1) \quad V_{ox} = 30 \text{ m/s} \quad Y = 80 \text{ metros} \quad g = 9.8 \text{ m/s}^2$$

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

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

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

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

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

$$2) \quad V_{ox} = 198 \text{ Km/h} \quad Y = 312 \text{ m/s} \quad g = 9.8 \text{ m/s}^2$$

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

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

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

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

$$\frac{198}{1} = \frac{1000 \text{ m}}{1} \cdot \frac{1}{3600 \text{ s}} = \frac{198,000 \text{ m}}{3,600 \text{ seg}} \quad 55 \text{ m/s}$$

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

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

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

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

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

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

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

a) altitud a la que vuela el avión

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

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

$$Y = \frac{1,577.8 \text{ pies}}{2} =$$

$$Y = \underline{788.9 \text{ pies}}$$

b) Cual es su alcance horizontal

$$X = V_{ox} t$$

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

5) $Y = 30 \text{ m}$ $V_{ox} = 12 \text{ m/s}$ $g = 9.8 \text{ m/s}^2$

a) $X = ?$

$$X = V_{ox} \times T$$

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

$$t = \sqrt{6.12 \text{ s}^2} = 2.47 \text{ seg}$$

$$X = 12 \text{ m/s} \times 2.47 \text{ seg} = \underline{X = 29.64 \text{ mts}}$$

6) $V_{ox} = 90 \text{ m/s}$ $Y = 28 \text{ mts}$ $g = 9.8 \text{ m/s}^2$

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

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

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

$$\underline{t = 2.38 \text{ seg}}$$

b) $X = V_{ox} T$

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

$$c) V_x = V_{ox} = 90 \text{ m/s}$$

$$V_y = gt$$

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

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

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

$$V_R = \sqrt{8,643 \text{ m}^2/\text{s}^2} = \underline{V_R = 92.97 \text{ m/s}}$$

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

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

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

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

$$V_{ox} = X \div t$$

$$V_{ox} = \frac{1.53 \text{ metros}}{0.49 \text{ seg}} = \underline{V_{ox} = 3.12 \text{ m/s}}$$

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

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

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

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

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

$$V_{ox} = \frac{24 \text{ metros}}{2.02 \text{ seg}} = \underline{V_{ox} = 11.88 \text{ m/s}}$$