

$$1) V_{0x} = 30 \text{ m/s}$$

$$V = 80 \text{ m/s}$$

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

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

$$t = \frac{\sqrt{2.1(80)}}{9.80 \text{ m/s}^2}$$

$$10.4 \text{ s}$$

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

b)

$$x = v_{0x} t$$

$$x = 30 \text{ m/s} \times 10.4 =$$

$$312 \text{ m}$$

$$2) v_{0x} = 198 \text{ km/h}$$

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

$$g = 9.80 \text{ m/s}^2$$

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

$$t = \frac{\sqrt{2(312 \text{ m})}}{9.80 \text{ m/s}^2}$$

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

$$b) X = V_0 t$$

$$\frac{198}{7} = \frac{100 \text{ m/s}}{7} \cdot \frac{7 \text{ s}}{3,6005} = \frac{198,000 \text{ m}}{3,6005 \text{ seg}} \cdot 55 \text{ m/s}$$

$$X = 155 \text{ m/s} \times 7,98 \text{ seg} = 1238,9 \text{ m}$$

$$3) X = 90 \text{ m/s} \quad Y = 100 \text{ m/s} \quad g = 9,8 \text{ m/s}^2$$

$$t = \sqrt{\frac{(2)(100 \text{ m/s})}{9,8 \text{ m/s}^2}}$$

$$t = \sqrt{20,40 \text{ m/s}^2} = 4,51 \text{ seg}$$

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

$$V_{0X} = 90 \text{ m/s} \div 1,51 \text{ seg} = 79,9 \text{ m/s}$$

$$4) V_{0X} = 520 \text{ pies/s} \quad t = 7 \text{ seg} \quad g = 32,2 \text{ pies/seg}^2$$

a) Al $t=0$ a la que vuela el avión

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

$$Y = 32,2 \text{ pies/seg}^2 (7)^2$$

$$Y = 1,577,8 \text{ pies} = Y = 788,9 \text{ pies}$$



B) Coal is so dense horizontal

$$x = v_0 t$$

$$x = 520 \text{ pies/s} \times 7 \text{ seg} = x = 3640 \text{ pies}$$

5) $y = 30 \text{ m}$ $v_{0x} = 12 \text{ m/s}$ $g = 9.8 \text{ m/s}^2$

a) $x = ?$

$$x = v_{0x} t$$

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

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

$$x = 12 \text{ m/s} \times 2.47 \text{ seg} = x = 29.64 \text{ m/s}$$

6) $v_{0x} = 90 \text{ m/s}$ $y = 28 \text{ m/s}$ $g = 9.8 \text{ m/s}^2$

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

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

b) $x = v_{0x} T$

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

$$c) \quad v_x = v_{0x} = 90 \text{ m/s}$$

$$v_y = gt$$

$$v_y = 9.8 \text{ m/s}^2 \times 2.385 = 23.32 \text{ m/s}^2$$

$$v_R = \sqrt{(v_x)^2 + (v_y)^2}$$

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

$$v_R = \sqrt{8,643 \text{ m}^2/\text{seg}^2} = v_R = 92.97 \text{ m/seg}$$

$$7) \quad y = 20 \text{ metros} \quad x = 1.53 \text{ metros} \quad g = 9.8 \text{ m/s}^2$$

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

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

$$t = \sqrt{0.21 \text{ seg}^2} = 0.49 \text{ seg}$$

$$v_{0x} = x \div t$$

$$v_{0x} = \frac{1.53 \text{ metros}}{0.49 \text{ seg}} = v_{0x} 3.12 \text{ m/s}^2$$

8) $Y = 20 \text{ metros}$ $X = 2.4 \text{ metros}$ $g = 9.8 \text{ m/s}^2$

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

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

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

$$V_{OX} = \frac{X}{T}$$

$$V_{OX} = \frac{2.4 \text{ metros}}{2.02 \text{ seg}} \quad V_{OX} = 11.88 \text{ m/seg}$$

