

Meta no. 7: "Ser puntual en mi horario". Fecha: 06/03/2021  
 Pablo Javier Alemán Velázquez, carne 2019-222, PRG BV

### Repaso de Unidad 1.

1.  $V_0 = 0$   
 $t = 9 \text{ s}$   
 $g = -9.8$   
 $y_f = ?$

$$V_f = V_0 + g \cdot t$$

$$V_f = 0 + (-9.8)(9)$$

$$V_f = -88.20$$

$$y = \frac{(V_0 + V_f)}{2} \cdot t$$

$$y = \left( \frac{0 + -88.20}{2} \right) \cdot 9$$

$$y = -396.90$$

$$y = (-396.90)$$

2.  $V_0 = 0 \text{ m/s}$   
 $V_f = 26 \text{ m/s}$   
 $d = 189 \text{ m}$   
 $a = ?$   
 $t = ?$

$$a = \frac{V_f - V_0}{t}$$

$$1.79 \text{ m/s}^2 = \frac{26}{t}$$

$$V_f^2 = V_0^2 + 2 \cdot a \cdot d$$

$$14.53 \text{ seg}$$

$$V_f^2 = 2ad$$

$$\frac{V_f^2}{2 \cdot d} = \frac{676}{378} = 1.79 \text{ m/s}^2$$

$$V = d/t$$

$$305.03$$

$$21 = d/14.53$$

$$d = 305.13 //$$

$$21 \cdot 14.53 = d$$

3

$$890 = \frac{12t^2}{2} - \frac{4t^2}{2}$$

$$890 = 8t^2$$

$$890 = t^2$$

$$8$$

$$72.50 = t^2$$

$$\sqrt{72.50} = t$$

$$t = 8.51 \text{ s}$$

$$t = 8.51 \text{ s}$$

4)

$$-26 - 40 = \frac{1}{2}gt^2$$

$$V_0 = 0$$

$$V_f = ?$$

$$g = -9.8$$

$$t = 6$$

$$V_f = 0 + (-9.8)(6)$$

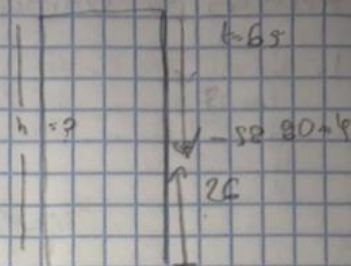
$$V_f = -58.80 \text{ m/s}$$

$$h = \frac{gt^2}{2}$$

$$h = \frac{9.8(6)^2}{2}$$

$$h = 176.40 + 26 = 202.40$$

$$h = 202.40 \text{ m}$$



5)

$$V = 49 \text{ m/s}$$

$$g = -9.8$$

$$\theta = 37^\circ$$

$$x = 158$$

$$49 \text{ m/s} \cdot \cos 37^\circ = 39.13 = V_x$$

$$49 \text{ m/s} \cdot \sin 37^\circ = 29.47 = V_y$$

$$V_x = 39.13$$

$$39.13 = \frac{158}{t} \Rightarrow t = 4.04 \text{ s}$$

$$V_f = -39.54$$

$$h = 79.97$$

$$-59.95 = \frac{1}{2}g(4.04)^2$$

$$119.14$$

$$-19.80$$

6)

$$\theta = 90^\circ$$

$$x = x_0 - v$$

$$x = 19$$

$$\frac{19}{V_x} = t$$

$$= 19.10$$

$$h = 2 \text{ m}$$

$$V_i = 19.10$$

$$V_i = \sqrt{\frac{9.8(19 \text{ m})^2}{2}}$$



7.

$$t = \sqrt{\frac{2 \cdot 45}{9}} = 3.915$$

$$V = \sqrt{6 + 9 \cdot t}$$

$$V =$$

8.  $V = 9 \text{ m/s}$

$$x = 20$$

$$x = vx \cdot t$$

$$20 = 9 \cdot t$$

$$2.22 \text{ s.}$$

$$y = vt - g(t)^2$$

$$y = 9(2.22) - 9(2.22)^2 = 24.15 \text{ m}$$

9.

1)  $V_f = v_0 + g \cdot t$        $2.65 \text{ s}$

$$0 = 26 - 9.8t$$

2)  $V_f^2 = v_i^2 + 2gh$

$$V_f^2 = 26^2 + 2(9.8)(17)$$

$$V_f^2 = 676 + 333.2$$

$$V_f^2 = 1009.2$$

$$V_f = 31.77$$

$$V_f = v_i + g \cdot t$$

$$31.77 = 26 - 9.8t$$

$$0 =$$

$$26 + 26.5$$

$$= 4.54 \text{ s}$$

$$t = 4.54 \text{ s}$$