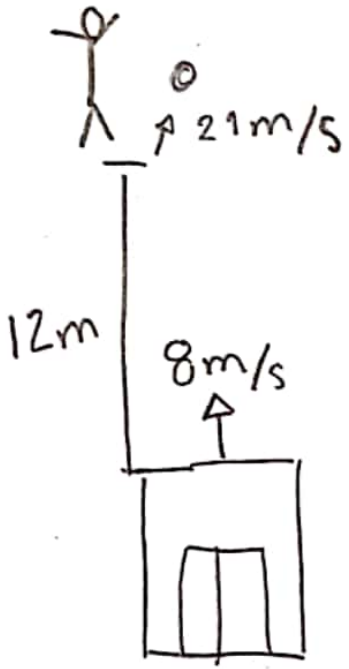
Samuel Chamali , 21881

X = Y

1



Datos

$V_{ia} = 8\ m/s$

$Y_{ia} = 12$

$V_{ip} = 21\ m/s$

$Y_{ip} = 0$

+3

a) Δt , $t_a = t_p$

b) ΔY , $Y_{fa} = Y_{fp}$

+7

a) $y = y_0 + v_{y0}t - \frac{1}{2}gt^2$

$y_{fa} = y_{fp}$

$-12 + 8t - \frac{9.81}{2}t^2 = 0 + 21t - \frac{9.81}{2}t^2$

$-12 + 8t = 21t$

$-12 = 13t$

$|-0.92| = t$

$t = -0.92\,s$

b) $y = y_0 + v_{y0}t - \frac{1}{2}gt^2$

Ascensor

$y_{fa} = -12 + 8(-0.92) - \frac{9.81}{2}(0.92)^2 = -23.51 \approx -23m$

$-12 + 7.36 - 4.15$

Pelota

$y_{fp} = 0 + 21(-0.92) - \frac{9.81}{2}(-0.92)^2 = -23.97 \approx -23m$

$+19.32 - 4.15$

②

Datos

tramo 1

$V_i = 0\ m/s$

$X_i = -18\ m$

$a = 5.2\ m/s^2$

$V_f = 25\ m/s$

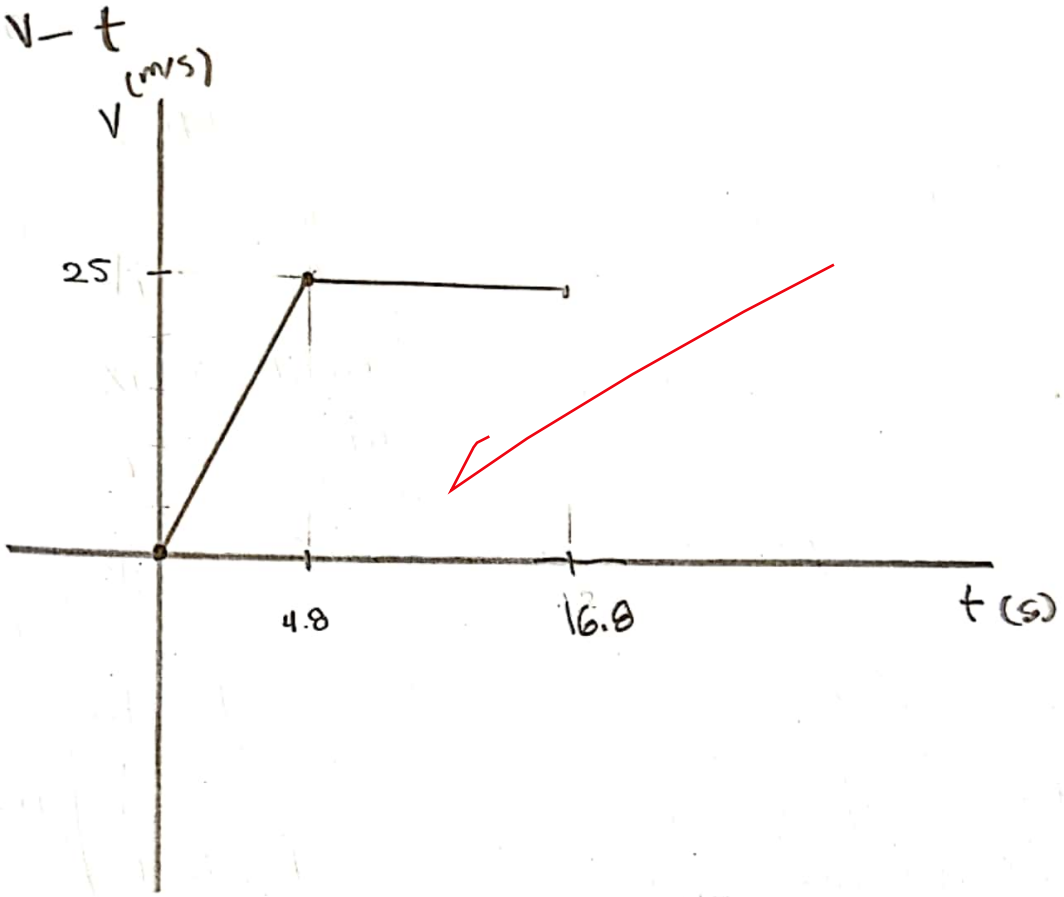
tramo 2

$\Delta t = 12\ s$

$V = 25\ m/s$

$a = 0$

a)

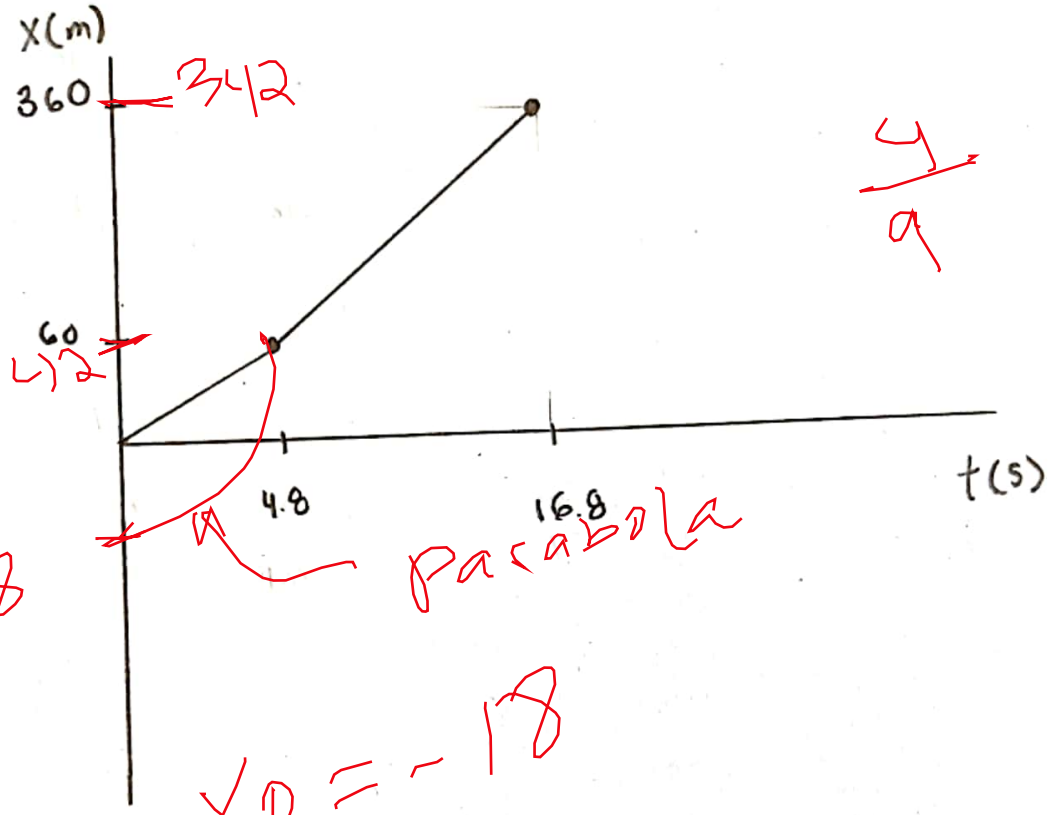


$$V_f = V_i + a\,t$$

$$25\,m/s = 0\,m/s + 5.2\,t$$

$$t = \frac{25}{5.2} = 4.8\,s$$

X - t



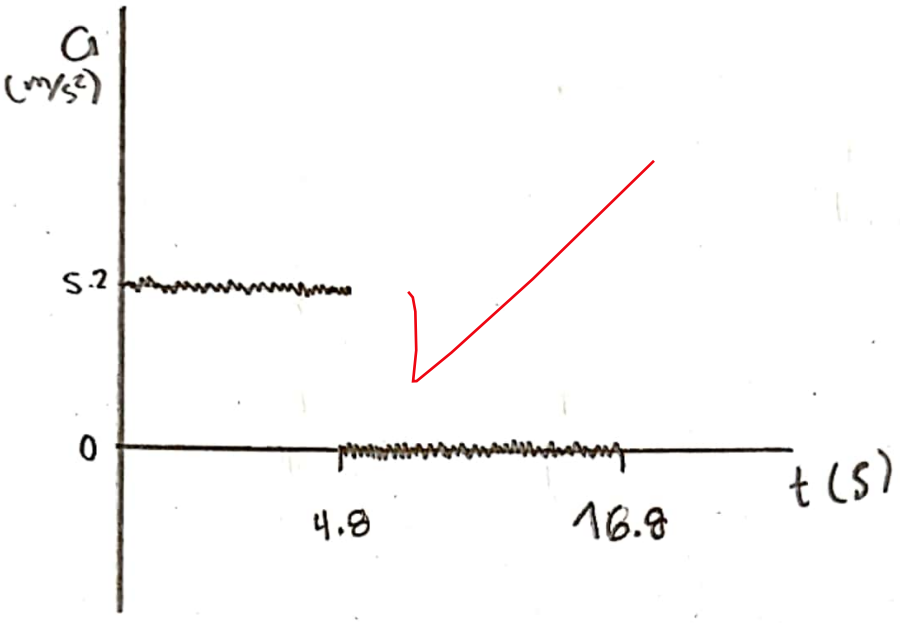
$X_0 = -18$

tramo 1 $\left\{ X = X_0 + v_0(t) + \frac{1}{2} a t^2 = 0 + 0 + \frac{1}{2} 5.2 (4.8)^2 = 59.9 \approx 60\,m \right.$

$60 - 18 = 42$

tramo 2 $\left\{ x = vt = 25(12) = 300\,m \right.$ ✓

a - t



$(0 \leq t \leq 4.8) \{ a = 5.2 \}$

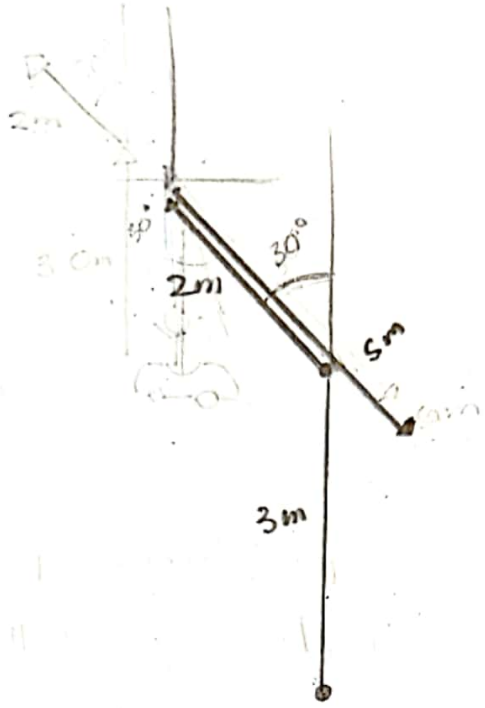
$(4.8 \leq t \leq 16.8) \{ a = 0 \}$

b) La coordenada final x de la particula es 360 m // -3

c) El tiempo en el que alcanzo 25 m/s fue de 4.8 s //

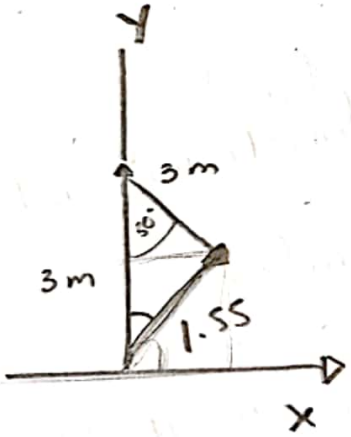
25.33
33.33

(3)



b) La distancia recorrida fue de 10 m

a)



a) El desplazamiento fue $\vec{1.55}$ a 75° del punto inicial. 15°

$$R^2 = P^2 + Q^2 - 2PQ\cos(30)$$

$$R^2 = 3^2 + 3^2 - 2(3)(3)\cos(30^\circ)$$

$$18 - 18\cos(30^\circ)$$

$$\sqrt{R^2} = \sqrt{2.41}$$

$$R = 1.55$$

$$\frac{\operatorname{sen} r}{R} = \frac{\operatorname{sen} B}{b}$$

$$\operatorname{sen} R = \frac{\operatorname{sen} B}{b} \cdot R$$

$$r = \operatorname{sen}^{-1}\left(\frac{\operatorname{sen} B}{b} \cdot R\right)$$

$$r = 75^\circ$$

$90 - 75^\circ = 15^\circ$