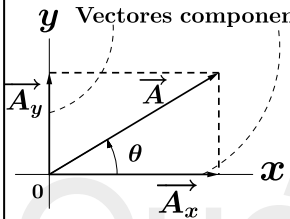
Vectores



$$\overrightarrow{A} \begin{cases} \overrightarrow{A_x} = A\cos(\theta)\hat{i} \\ \overrightarrow{A_y} = A\cos(\theta)\hat{j} \end{cases}$$

$$\tan(\theta) = \frac{|\overrightarrow{A}_y|}{|\overrightarrow{A}_x|}$$

$$\left|\overrightarrow{A}\right| = \sqrt{(A_x)^2 + (A_y)^2}$$

M. Rectilíneo Unif.

$$a = 0$$
$$v = cte$$
$$x = vt + x_i$$

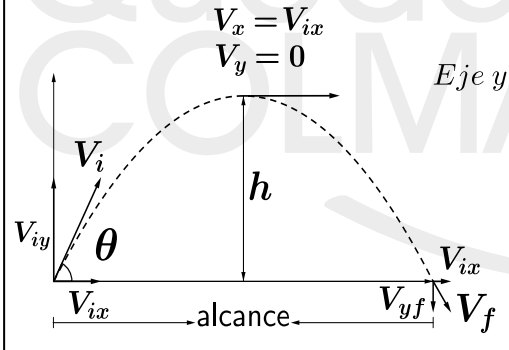
M.R.U. acelerado

$$a = cte$$
$$v = v_i + at$$
$$x = x_i + v_i t + \tfrac{1}{2}at^2$$

M. R.U. acelerado: caída libre

$$a = cte = g = 9,8 m/s^2$$
$$v_y = v_{iy} + gt$$
$$y = y_i + v_{iy}t + \tfrac{1}{2}gt^2$$
$$v_y^2 = v_{iy}^2 + 2g(y - y_i)$$

Mov. Parabólico



$$Eje\ y \begin{cases} a_y = cte = g \\ v_y = v_{iy} + gt \\ y = y_i + v_{iy}t + \tfrac{1}{2}gt^2 \end{cases}$$

$$v_{iy} = v_i \sin(\theta)$$

$$Eje\ x \begin{cases} a_x = 0 \\ v_x = cte = v_{ix} \\ x = x_i + v_{ix}t \end{cases}$$

$$v_{ix} = v_i \cos(\theta)$$

$$y = y_i + (x - x_i)\tan(\theta) + \tfrac{1}{2}g\left(\frac{x - x_i}{v_i \cos(\theta)}\right)^2$$

M. Circular Unif.

$$\alpha = 0 \ \text{ó}\ \alpha_t = 0$$
$$\omega = cte \ \text{ó}\ v = cte$$
$$\theta = \theta_i + \omega_i t$$

M.C.U. acelerado

$$\alpha = cte \ \text{ó}\ \alpha_t = cte$$
$$\omega = \omega_i + \alpha t$$
$$\omega^2 = \omega_i^2 + 2\alpha(\theta - \theta_i)$$
$$\theta = \theta_i + \omega_i t + \tfrac{1}{2}\alpha t^2$$
$$v = R\omega \qquad \omega = \tfrac{2\pi}{T}$$
$$a_t = R\alpha$$
$$a_n = \frac{v^2}{R} = R\omega^2 = \frac{4\pi^2 R}{T^2}$$

Quédate en CASA COLMAYOR