

Calcula Yisavied Rodriguez  
Ramirez  
1 Unidad

$$y = 3x^2 + 2x + 3$$

$$y + dy = 3(x+dx)^2 + 2(x+dx) + 3$$

$$y + dy = 3(x^2 + 2x dx + dx^2) + 2x + 2dx + 3$$

$$y + dy = 3x^2 + 6x dx + 3dx^2 + 2x + 2dx + 3$$

$$\begin{array}{r} -y \qquad \qquad \qquad = -3x^2 \qquad \qquad \qquad -2x \qquad \qquad -3 \\ \hline \end{array}$$

$$\frac{dy}{dx} = \frac{6x dx}{dx} + 3$$

$$y = x^5 + 5x^6 - 10x^3 + 6$$

$$y = 5x^6 + x^5 - 10x^3 + 6$$

$$\frac{d}{dx} (5x^6 + x^5 - 10x^3 + 6)$$

$$F3 \quad dy = \frac{d}{dx} (5x^6) + \frac{d}{dx} (x^5) - \frac{d}{dx} (10x^3) + \frac{d}{dx} (6)$$

$$F4 \quad = 5 \frac{d}{dx} (x^6) + 5x^{5-1} - 10 \frac{d}{dx} (x^3) + 0$$

$$5(6)x^{6-1} + 5x^4 - 10(3)x^{3-1}$$

$$\boxed{30x^5 + 5x^4 - 30x^2}$$

$$Z = \frac{1}{\sqrt{x}} + \frac{4}{\sqrt{x}}$$

$$y = \frac{1}{2} \cdot \frac{1}{x^2} + \frac{4}{x^{1/2}}$$

$$= \frac{1}{2} x^{-2} + 4 x^{-1/2}$$

$$= -\frac{2}{2} x^{-3} + 4 \left(-\frac{1}{2}\right) x^{-3/2}$$

$$= -x^{-3} - 2 x^{-3/2}$$

$$= -\frac{1}{x^3} - \frac{2}{x^{3/2}}$$

$$= -\frac{1}{x^3}$$

$$f(t) = \frac{2}{\sqrt{t}} + \frac{6}{\sqrt[3]{t}}$$

$$= \frac{2}{t^{1/2}} + \frac{6}{t^{1/3}}$$

$$= 2 t^{-1/2} + 6 t^{-1/3}$$

$$= -2 \left(\frac{1}{2}\right) t^{-1/2-2/2} + 6 \left(-\frac{1}{3}\right) t^{-1/3-3/3}$$

$$= -t^{-3/2} - 2 t^{-4/3}$$

$$= -\frac{1}{t^{3/2}} - \frac{2}{t^{4/3}} = \left( -\frac{1}{\sqrt{t^3}} - \frac{2}{\sqrt[3]{t^4}} \right)$$

Norma

# FISICA

Datos

$$V = 900 \text{ km/hr}$$

$$t = ?$$

$$d = 200 \text{ mT}$$

CONVERSION

$$900 \frac{\text{km}}{\text{hr}} \times \frac{1000 \text{ mT}}{1 \text{ km}} \frac{1 \text{ hr}}{3600 \text{ seg}}$$

$$V = 250 \text{ mT/seg}$$

$$V = \frac{d}{t} \Rightarrow Vt = d \therefore t = \frac{d}{V}$$

$$t = \frac{200 \text{ mT}}{250 \text{ mT/s}} \Rightarrow t = 0.8 \text{ seg}$$

Datos

$$d = 8 \text{ km}$$

$$t = 12 \text{ min}$$

$$V = ? \text{ km/hr } \neq \text{ mT/seg}$$

$$t = 12 \text{ min} \frac{1 \text{ hr}}{60 \text{ min}}$$

$$t = 0.2 \text{ hr}$$
$$V = \frac{d}{t} = \frac{8 \text{ km}}{0.2 \text{ hr}}$$

# FISICA

Datos

$$V_i = 6 \text{ m/s}$$

$$t = 4 \text{ seg}$$

$$V_f = 20 \text{ m/s}$$

$$a = ?$$

$$d = ?$$

$$a = \frac{V_f - V_i}{t} = \frac{20 \text{ m/s} - 6 \text{ m/s}}{4 \text{ seg}}$$

$$a = 3.5 \text{ m/s}^2$$

$$d = \frac{1}{2} (V_i + V_f) t = \frac{1}{2} (6 \text{ m/s} + 20 \text{ m/s}) \cdot 4 \text{ seg}$$

$$d = 52 \text{ m}$$

Datos

$$t_i = 2 \text{ seg}$$

$$t_f = 4 \text{ seg}$$

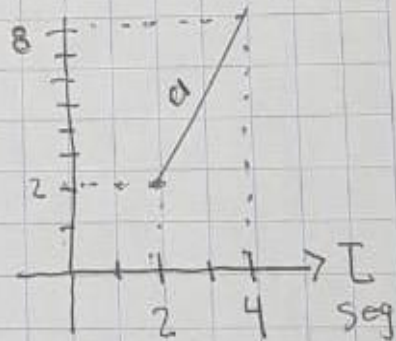
$$V_i = 2 \text{ m/s}$$

$$V_f = 8 \text{ m/s}$$

$$a = \frac{\Delta V}{\Delta t} = \frac{V_f - V_i}{t_f - t_i} = \frac{8 \text{ m/s} - 2 \text{ m/s}}{4 \text{ seg} - 2 \text{ seg}}$$

$$a = \frac{6 \text{ m/s}}{2 \text{ seg}}$$

$$a = 3 \text{ m/s}^2$$



# FISICA

$$\textcircled{1} V = \frac{\Delta d}{\Delta t} = \frac{d_2 - d_1}{t_2 - t_1}$$

$$\textcircled{2} V_{\text{MEDIA}} = \frac{v_i + v_f}{2}$$

$$\textcircled{3} d = \frac{v_1 + v_2}{2} t \quad \textcircled{4} V_{\text{INST}} = \frac{d_2 - d_1}{t_2 - t_1}$$

$$\textcircled{5} V_{\text{PROM}} = \frac{v_1 + v_2 + v_3}{3}$$

$$\textcircled{6} a = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{t_f - t_i}$$

$$\textcircled{7} v_f = v_i + a(t_f - t_i) \quad \textcircled{8} v_f = v_i + at$$

$$\textcircled{9} a = \frac{v_f - v_i}{t}$$

$$\textcircled{10} v_f^2 = v_i^2 + 2ad$$

$$\textcircled{11} d = v_i t + \frac{aT^2}{2}$$

## MRUV

ecu Eral

$$v_f = v_i + aT$$

$$d = \frac{1}{2} (v_i + v_f) T$$

$$v_f^2 = v_i^2 + 2ad$$

$$d = v_i t + \frac{1}{2} aT^2$$

ecu Especial

$$v_i = 0 \quad \text{condición}$$

$$v_f = aT$$

$$d = \frac{1}{2} v_f T$$

$$v_f^2 = 2ad$$

$$d = \frac{1}{2} aT^2$$