

WALKER 7

Ex 1 H74

$$S(x, t) = 3 \times 10^{-6} \sin(17\pi x + 680\pi t)$$

$$5) \Delta p_{\max} = \rho v \omega S_{\max} = \boxed{2.6367 \text{ Pa}}$$

$$(1.21)(340)(680\pi)(3 \times 10^{-6})$$

Electro Doppler

$$f_L = f_s \left(\frac{v + v_L}{v + v_s} \right)$$



TAREA 11

$$v_f = gt$$

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$$f_L = f_s \left(\frac{v}{v + gt} \right)$$

↑

$$t_1 = \left(\frac{f_s - f_L}{f_L} \right) \frac{v}{g} = 1.93s$$

$$d_1 = \frac{1}{2} g t_1^2 = \underline{18.3m}$$

$$t_{vuelta} = \frac{18.3m}{340m/s} = 0.0538s.$$

$$d_{TOTAL} = \frac{1}{2} g (t_1 + t_{VUELTA})^2 = \boxed{19.3m}$$

TAREA 10

$f(x, y)$ → Superficie

$f(x)$ → Curve

$$\frac{\partial f(x, y)}{\partial x} \leftarrow y = \text{cte}$$

$$\frac{\partial f(x, y)}{\partial y} \leftarrow x = \text{cte}$$

$$y(x, t) = A \sin(x - vt)$$

$$\frac{\partial^2 y}{\partial x^2} = \frac{1}{v^2} \frac{\partial^2 y}{\partial t^2} \leftarrow$$

$$\frac{\partial^2 y}{\partial x^2} = \frac{\partial}{\partial x} (A \cos(x - vt) \cdot 1) = -A \sin(x - vt)$$

$$\begin{aligned} \frac{\partial^2 y}{\partial t^2} &= \frac{\partial}{\partial t} (A \cos(x - vt) \cdot (-v)) = -A \sin(x - vt) (-v)(-v) \\ &= -A \sin(x - vt) v^2 \end{aligned}$$

$$\frac{\partial^2 y}{\partial x^2} = \frac{1}{v^2} \frac{\partial^2 y}{\partial t^2}$$

$$\underline{-A \sin(x-vt)} = \frac{1}{v^2} \left(-A \sin(x-vt) \cdot v^2 \right) \checkmark$$

$$[2] \quad \frac{\partial^2 y}{\partial x^2} = \frac{1}{v^2} \frac{\partial^2 y}{\partial t^2}$$

$$y(x,t) = A \sin(kx) \sin(\omega t)$$