1. Función de onda

$$y(t) = A\,\mathrm{sen}\,\omega t \Rightarrow y(x,t) = A\,\mathrm{sen}\,\omega(t - t_x) \Rightarrow \boxed{\xi(x,t) = A\,\mathrm{sen}\,\omega\left(t - \frac{x}{v}\right)}$$

$$v = \tfrac{\lambda}{T} = \lambda\nu$$

$$\xi(x,t) = A\,\mathrm{sen}\,\underbrace{2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right)}_{fase} = A\,\mathrm{sen}(\omega t - kx) \qquad k = \frac{2\pi}{\lambda}$$

2. Intensidad

$$\boxed{I = \frac{P}{S}} = \frac{E}{tS} \qquad (t = 1, S = 1, h = v) \qquad I = E_{tot} = nE$$

$$E = \frac{1}{2}mv_{max}^2 = \frac{1}{2}m\omega^2A^2 = 2m\pi^2\nu^2A^2 \qquad I = 2mn\pi^2\nu^2A^2 \qquad \rho = \frac{M}{V} = \frac{nm}{v}$$

$$nm = \rho v \qquad \boxed{I = 2\rho v\pi^2\nu^2A^2}$$

3. Amortiguación

$$\boxed{A = A_0e^{-\alpha x}} \qquad \boxed{I = I_0e^{-2\alpha x}}$$

$$I = \frac{P}{4\pi r^2} \qquad \boxed{I_1r_1^2 = I_2r_2^2} \qquad \boxed{A_1r_1 = A_2r_2}$$

4. Escala decibélica

$$\boxed{\beta_{dB} = 10\log\frac{I}{I_0}} \qquad I_0 = 10^{-12}\ \mathrm{Wm}^{-2}$$

A. Velocidades de propagación

Cuerda	$\sqrt{\frac{T}{\mu}}$	$\mu = \frac{m}{L}$
Sonido	$k\sqrt{T}$	
Muelle	$L\sqrt{\frac{k}{m}}$	
Sólido	$\sqrt{\frac{Y}{\rho}}$	
Electromagnéticas	$\frac{1}{\sqrt{\mu\varepsilon}}$	