Wave formulas

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Wave equation	$y(x,t) = A\cos(\omega t \pm k x), \quad k = 2\pi/\lambda$ $y(x,t) = A\cos\left(2\pi f t \pm \frac{2\pi}{\lambda} x\right)$ $y(x,t) = A\cos\left[2\pi\left(f t \pm \frac{1}{\lambda} x\right)\right]$
Vibration speed of material particles	$V_v(x,t) = -A\omega\sin(\omega t \pm k x)$ $V_{v.MAX} = \pm A\omega$
Others	$T = \frac{1}{f}; \quad \omega = 2\pi f; \quad v = \lambda f$

Symbol	Magnitude	S.I. unit
y	Wave state	
x	x coordinate	m
t	Time	s
A	Amplitude	
ω	Angular frequency	rad/s
k	Wavenumber	rad/m
T	Period	s
v	Phase speed	m/s
V_v	Vibration speed of material particles	m/s
λ	Wavelength	m
f	Wave frequency	Hz