

Vibrations, Waves, and Optics Symbols Used in This Book

Symbols that are **boldfaced** refer to vector quantities that have both a magnitude and a direction. Symbols that are *italicized* refer to quantities with only a magnitude. Symbols that are neither are usually units.

Symbol	Quantity
C	center of curvature for spherical mirror
d	slit separation in double-slit interference of light
$d \sin \theta$	path difference for interfering light waves
F_{elastic} , F_{elastic}	spring force
F	focal point
f	focal length
f	frequency
f_n	n th harmonic frequency
h	object height
h'	image height
k	spring constant
L	length of a pendulum, vibrating string, or vibrating column of air
ℓ	path length of light wave
λ	(Greek <i>lambda</i>) wavelength
m	order number for interference fringes
M	magnification of image
n	harmonic number (sound)
n	index of refraction
p	object distance
q	image distance
T	period of a pendulum (simple harmonic motion)
θ	(Greek <i>theta</i>) angle of incidence of a beam of light (reflection)
θ	(Greek <i>theta</i>) angle of fringe separation from center of interference pattern
θ'	(Greek <i>theta</i>) angle of reflection
θ_c	(Greek <i>theta</i>) critical angle of refraction
θ_i	(Greek <i>theta</i>) angle of incidence of a beam of light (refraction)
θ_r	(Greek <i>theta</i>) angle of refraction

Electromagnetism Symbols Used in This Book

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Symbol	Quantity
B , B	magnetic field
C	capacitance
d	separation of plates in a capacitor
E , E	electric field
emf	emf (potential difference) produced by a battery or electromagnetic induction
F_{electric} , F_{electric}	electric force
F_{magnetic} , F_{magnetic}	magnetic force
I	electric current
i	instantaneous current (ac circuit)
I_{max}	maximum current (ac circuit)
I_{rms}	root-mean-square current (ac circuit)
L	self-inductance
ℓ	length of an electrical conductor in a magnetic field
M	mutual inductance
N	number of turns in a current-carrying loop or a transformer coil
PE_{electric}	electrical potential energy
Q	large charge or charge on a fully charged capacitor
q	charge
R	resistance
r	separation between charges
R_{eq}	equivalent resistance
V	electric potential
ΔV	potential difference
Δv	instantaneous potential difference (ac circuit)
ΔV_{max}	maximum potential difference (ac circuit)
ΔV_{rms}	root-mean-square potential difference (ac circuit)
ω	(Greek <i>omega</i>) angular frequency