

Help with the 'Relationship sheet' – Higher Physics

Understanding quantities, symbols and units

Symbol	Quantity	Unit	
a	acceleration	ms^{-2}	metres per second per second
A	area	m^2	metres squared
c	speed of light	$(3 \times 10^8) \text{ms}^{-1}$	metres per second
C	capacitance	F	farads
d	distance (or displacement)	m	metres
d	slit separation (distance)	m	metres
E	emf (electromotive force)	V	volts
E	energy	J	joules
E_1	lower energy level	J	joules
E_2	higher energy level	J	joules
E_k	kinetic energy	J	joules
E_p	potential energy	J	joules
E_w	work done	J	joules
f	frequency	Hz	hertz
f_o	observed frequency	Hz	hertz
f_0	threshold frequency	Hz	hertz
f_s	frequency of source	Hz	hertz
F	force	N	newtons
g	gravitational field strength	N kg^{-1}	newtons per kilogram
G	universal constant of gravitation	$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$	metres cubed per kilogram per second squared
h	height	m	metres
h	Planck's constant	$(6.63 \times 10^{-34}) \text{Js}$	joule seconds
H_0	Hubble's constant	$(2.3 \times 10^{-18}) \text{s}^{-1}$	seconds ⁻¹
I	current	A	amps
I	irradiance	Wm^{-2}	watts per square metre
I_{peak}	peak current	A	amps
I_{rms}	rms current	A	amps
k	constant		

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l	proper length	m	metres
l'	relativistic (contracted) length	m	metres
m	mass	kg	kilograms
m	order of maxima/minima		(no units)
m_1	mass 1	kg	kilograms
m_2	mass 2	kg	kilograms
n	refractive index		(no units)
p	momentum	kg ms^{-1}	kilograms metres per second
P	power	W	watts
Q	charge	C	coulombs
r	distance	m	metres
R	resistance	Ω	ohms
R_1		Ω	ohms
R_2		Ω	ohms
R_T	total resistance	Ω	ohms
s	distance (or displacement)	m	metres
t	time	s	seconds
t	proper time	s	seconds
t'	relativistic (dilated) time	s	seconds
T	period	s	seconds
u	initial velocity	ms^{-1}	metres per second
v	velocity (or final velocity)	ms^{-1}	metres per second
v	speed of source	ms^{-1}	metres per second
v_1	speed in medium 1	ms^{-1}	metres per second
v_2	speed in medium 2	ms^{-1}	metres per second
v_s	velocity of source	ms^{-1}	metres per second
\bar{v}	average velocity	ms^{-1}	metres per second
V	voltage	V	volts
V_1		V	volts

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V_2		V	volts
V_{peak}	peak voltage	V	volts
V_{rms}	rms voltage	V	volts
W	weight	N	newtons
W	work / energy	J	joules
z	redshift		(no units)
θ	angle	°	degrees
θ_1	angle in medium 1	°	degrees
θ_2	angle in medium 2	°	degrees
θ_c	critical angle	°	degrees
λ	wavelength	m	metres
λ_1	wavelength in medium 1	m	metres
λ_2	wavelength in medium 2	m	metres
$\lambda_{observed}$	observed wavelength	m	metres
λ_{rest}	wavelength (measured at rest)	m	metres