			. C: Constant, V: Variable, F 32-bit integer, \mathcal{U} : Uniform d				: Non-Negative, I*: Intege
Eq. ID	Formula		Symbols	SI Derived Unit	SI Unit	Properties Original Ours	Distributions Original Ours
I.8.14	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$		Distance Position Position Position Position	$m \\ m \\ m \\ m \\ m$	$m \ m \ m \ m \ m \ m \ m$	V, F, P V, F, NN V, F, P V, F V, F, P V, F V, F, P V, F V, F, P V, F	$egin{array}{cccccccccccccccccccccccccccccccccccc$
I.10.7	$m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$	$m \\ m_0 \\ v$	Mass Invariant mass Velocity	$kg \ kg \ m/s$	$kg \ kg \ m\cdot s^{-1}$	V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	N/A N/A $\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^{-1},10^1)$ $\mathcal{U}(1,2)$ $\mathcal{U}_{\log}(10^5,10^8)$
		$ \begin{array}{c} c\\ A\\ x_1\\ y_1 \end{array} $	Speed of light Inner product Element of a vector Element of a vector	$ \begin{array}{c c} m/s \\ 1 \\ 1 \\ 1 \end{array} $	$ \begin{array}{c} m \cdot s^{-1} \\ 1 \\ 1 \\ 1 \end{array} $	V, F, P C, F, P V, F, P V, F V, F, P V, F V, F, P V, F	$ \begin{array}{c c} \mathcal{U}(3,10) & 2.998 \times 10^8 \\ \hline N/A & N/A \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \end{array} $
I.11.19	$A = x_1 y_1 + x_2 y_2 + x_3 y_3$	x_2 y_2 x_3 y_3	Element of a vector Element of a vector Element of a vector Element of a vector	1 1 1 1	1 1 1	V, F, P V, F V, F, P V, F V, F, P V, F V, F, P V, F	$ \begin{array}{lll} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \end{array} $
I.12.2	$F = \frac{q_1 q_2}{4\pi \epsilon r^2}$	F q_1 q_2 r	Electrostatic force Electric charge Electric charge Distance Vacuum permittivity	$N \ C \ C \ m \ F/m$	$kg \cdot m \cdot s^{-2}$ $s \cdot A$ $s \cdot A$ m $kg^{-1} \cdot m^{-3} \cdot s^4 \cdot A$	V, F, P V, F V, F, P V, F V, F, P V, F V, F, P V, F, P V, F, P C, F, P	$ \begin{array}{c cccc} N/A & N/A \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \end{array} $
I.12.11	$F = q \left(E + Bv \sin \left(\theta \right) \right)$	F q E B	Force Electric charge Electric field Magnetic field strength	N C V/m T	$kg \cdot m \cdot s^{-2}$ $s \cdot A$ $kg \cdot m \cdot s^{-3} \cdot A^{-1}$ $kg \cdot s^{-2} \cdot A^{-1}$	V, F V, F V, F, P V, F V, F, P V, F, P V, F, P V, F, P	N/A N/A $U(1,5)$ $U_{log}(10^{-1},10^1)$ $U(1,5)$ $U_{log}(10^{-1},10^1)$ $U(1,5)$ $U_{log}(10^{-1},10^1)$ $U(1,5)$ $U_{log}(10^{-1},10^1)$
I.13.4	$K = \frac{1}{2}m(v^2 + u^2 + w^2)$	v θ K m v	Velocity Angle Kinetic energy Mass Element of velocity	m/s rad J kg m/s	$m \cdot s^{-1}$ 1 $kg \cdot m^2 \cdot s^{-2}$ kg $m \cdot s - 1$	V, F, P V, F, P V, F, P V, F, N V, F, P V, F, P V, F, P V, F, P V, F, P V, F	$rac{\mathcal{V}(1,5)}{\mathrm{N/A}} rac{\mathcal{U}(0,rac{\pi}{2})}{\mathrm{N/A}}$
		$egin{array}{c} u \\ w \\ \hline U \\ G \end{array}$	Element of velocity Element of velocity Potential energy Gravitational constant	m/s m/s J $m^3 \cdot kg^{-1} \cdot s^{-2}$	$\frac{m \cdot s - 1}{m \cdot s - 1}$ $\frac{kg \cdot m^2 \cdot s^{-2}}{}$	V, F, P V, F V, F, P V, F V, F V, F V, F, P C, F, P	$ \begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \hline N/A & N/A \\ \mathcal{U}(1,5) & 6.674 \times 10^{-11} \end{array} $
I.13.12	$U = Gm_1m_2\left(\frac{1}{r_2} - \frac{1}{r_1}\right)$	m_1 m_2 r_2 r_1	Mass (The Earth) Mass Distance Distance Relativistic momentum	$egin{array}{c} kg \ m \ m \end{array}$	kg kg m m $kg \cdot m \cdot s^{-1}$	V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	$\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^{-2},10^{0})$
I.15.10	$p = \frac{m_0 v}{\sqrt{1 - v^2/c^2}}$	$p \\ m_0 \\ v \\ c \\ v_1$	Rest Mass Velocity Speed of light Velocity	$kg \cdot m/s$ kg m/s m/s m/s	$kg \cdot m \cdot s$ kg $m \cdot s^{-1}$ $m \cdot s^{-1}$ $m \cdot s^{-1}$	V, F, P V, F, P V, F, P V, F, P V, F, P V, F V, F, P C, F, P V, F, P V, F	$ \begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-2},10^0) \\ \mathcal{U}(1,2) & \mathcal{U}_{\log}(10^5,10^7) \\ \mathcal{U}(3,10) & 2.998 \times 10^8 \\ \hline N/A & N/A \end{array} $
I.16.6	$v_1 = \frac{u+v}{1+uv/c^2}$	u v c r	Velocity Velocity Speed of light Center of gravity	m/s m/s m/s	$m \cdot s^{-1}$ $m \cdot s^{-1}$ $m \cdot s^{-1}$	V, F, P V, F V, F, P V, F V, F, P C, F, P V, F, P V, F	$\begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^6,10^8) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^6,10^8) \\ \mathcal{U}(1,5) & 2.998 \times 10^8 \\ \hline N/A & N/A \end{array}$
I.18.4	$r = \frac{m_1 r_1 + m_2 r_2}{m_1 + m_2}$	m_1 r_1 m_2 r_2 E	Mass Position Mass Position Energy	$egin{array}{c} kg \\ m \\ kg \\ \hline m \\ J \end{array}$	kg m kg m $kg \cdot m^2 \cdot s^{-2}$	V, F, P V, F, P V, F, P V, F V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	$\begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \hline \mathcal{N}/A & \mathrm{N}/A \end{array}$
I.24.6	$E = \frac{1}{4}m(\omega^2 + \omega_0^2)x^2$	$m \ \omega \ \omega_0 \ x$	Mass Angular velocity Angular velocity Position	$kg \ rad/s \ rad/s \ m$	$kg \\ s^{-1} \\ s^{-1} \\ m$	V, F, P V, F, P V, F, P V, F V, F, P V, F V, F, P V, F	$ \begin{array}{cccc} \mathcal{U}(1,3) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,3) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,3) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,3) & \mathcal{U}_{\log}(10^{-1},10^1) \\ \mathcal{U}(1,3) & \mathcal{U}_{\log}(10^{-1},10^1) \end{array} $
1.29.4	$k = \frac{\omega}{c}$	k ω c P	Wavenumber Frequency of electromagnetic wave Speed of light Radiant energy	$\frac{m/s}{W}$	m^{-1} s^{-1} $m \cdot s^{-1}$ $kg \cdot m^2 \cdot s^{-3}$	V, F, P V, F, P V, F, P V, F, P V, F, P C, F, P V, F, P V, F, P	$U(1, 10)$ 2.998×10^8 N/A N/A
I.32.5	$P = \frac{q^2 a^2}{6\pi\epsilon c^3}$	q a ϵ c ω	Electric charge Magnitude of direction vector Vacuum permittivity Speed of light Angular velocity	$C \\ m/s^2 \\ F/m \\ m/s \\ \hline rad/s$	$s \cdot A$ $m \cdot s^{-2}$ $kg^{-1} \cdot m^{-3} \cdot s^4 \cdot A$ $m \cdot s^{-1}$ s^{-1}	V, F, P V, F V, F, P V, F, P V, F, P C, F, P V, F, P C, F, P V, F, P V, F	$\begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-3},10^{-1}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{5},10^{7}) \\ \mathcal{U}(1,5) & 8.854 \times 10^{-12} \\ \mathcal{U}(1,5) & 2.998 \times 10^{8} \\ \hline \text{N/A} & \text{N/A} \end{array}$
I.34.8	$\omega = rac{qvB}{p}$	$egin{array}{c} q \\ v \\ B \\ p \end{array}$	Electric charge Velocity Magnetic field Angular momentum	$C \\ m/s \\ T \\ J \cdot s$	$s \cdot A$ $m \cdot s^{-1}$ $kg \cdot s^{-2} \cdot A^{-1}$ $kg \cdot m^2 \cdot s^{-1}$	V, F, P V, F V, F, P V, F V, F, P V, F V, F, P V, F	$ \begin{array}{lll} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11},10^{-9}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{5},10^{7}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{1},10^{3}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{9},10^{11}) \end{array} $
I.34.10	$\omega = \frac{\omega_0}{1 - v/c}$	$\begin{array}{c} \omega \\ \omega_0 \\ v \\ \hline c \\ \hline \end{array}$	Frequency of electromagnetic wave Frequency of electromagnetic wave Velocity Speed of light Energy		$s^{-1} \\ s^{-1} \\ m \cdot s^{-1} \\ m \cdot s^{-1} \\ m \cdot s^{-1} \\ kq \cdot m^2 \cdot s^{-2}$	V, F, P V, F, P V, F, P V, F, P V, F, P V, F V, F, P C, F, P V, F, P V, F, P	$\mathcal{U}(1,2) = \mathcal{U}_{\log}(10^5, 10^7)$
I.34.27	$W = \frac{h}{2\pi} \omega$	h ω r ϵ	Planck constant Frequency of electromagnetic wave Bohr radius Vacuum permittivity	$J \cdot s$	$kg \cdot m^{-1} \cdot s = kg \cdot m^{2} \cdot s^{-1}$ s^{-1} m $kg^{-1} \cdot m^{-3} \cdot s^{4} \cdot A^{1}$	V, F, P C, F, P V, F, P V, F, P V, F, P V, F, P	$\mathcal{U}(1,5)$ 6.626 × 10 ⁻³⁴
I.38.12	$r = 4\pi\epsilon \frac{(h/(2\pi))^2}{mq^2}$	h m q U	Planck constant Mass Electric charge Internal energy	$J \cdot s$ kg C J	$kg \cdot m^2 \cdot s^{-1}$ kg $s \cdot A$ $kg \cdot m^2 \cdot s^{-2}$	V, F, P C, F, P V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	$\begin{array}{ccc} \mathcal{U}(1,5) & 6.626 \times 10^{-34} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-28},10^{-26}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11},10^{-9}) \\ \hline N/A & N/A \end{array}$
I.39.10	$U = \frac{3}{2}PV$	V = V = V	Pressure Volume Energy	$\frac{Pa}{m^3}$	$\frac{kg \cdot m^{-1} \cdot s^{-2}}{m^3}$ $kg \cdot m^2 \cdot s^{-2}$	V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	$\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^{-5},10^{-3})$
I.39.11	$U = \frac{PV}{\gamma - 1}$	$\begin{array}{c} \gamma \\ P \\ V \end{array}$	Heat capacity ratio Pressure Volume Diffusion coefficient	$ \begin{array}{c} 1\\Pa\\m^3\\m^2/s\end{array} $	$ \begin{array}{c} 1 \\ kg \cdot m^{-1} \cdot s^{-2} \\ m^{3} \\ m^{2} \cdot s^{-1} \end{array} $	V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P V, F, P	$\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^4, 10^6)$ $\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^{-5}, 10^{-3})$ N/A N/A
I.43.31	$D = \mu kT$	μ k T	Viscosity Boltzmann constant Temperature Thermal conductivity	$Pa \cdot s$ J/K K $W/(m \cdot K)$	$kg \cdot m^{-1} \cdot s^{-1}$ $kg \cdot m^{2} \cdot s^{-2} \cdot K^{-1}$ K $kg \cdot m \cdot s^{-3} \cdot K^{-1}$, , , , , ,	$ \begin{array}{ccc} \mathcal{U}(1,5) & 1.381 \times 10^{-23} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^1,10^3) \\ \hline \text{N/A} & \text{N/A} \end{array} $
I.43.43	$\kappa = \frac{1}{\gamma - 1} \frac{kv}{\sigma_c}$	$\gamma \ k \ v \ \sigma_c$	Heat capacity ratio Boltzmann constant Velocity Molecular collision cross section	$1\\J/K\\m/s\\m^2$	$kg \cdot m^2 \cdot s^{-2} \cdot K^{-1}$ $m \cdot s^{-1}$ m^2	V, F, P V, F, P V, F, P V, F, P	$ \begin{array}{lll} \mathcal{U}(1,5) & 1.381 \times 10^{-23} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^2,10^4) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-21},10^{-19}) \end{array} $
I.48.2	$E = \frac{mc^2}{\sqrt{1 - v^2/c^2}}$	E m c v	Energy Mass Speed of light Velocity	$J \ kg \ m/s \ m/s$	$kg \cdot m^2 \cdot s^{-2}$ kg $m \cdot s^{-1}$ $m \cdot s^{-1}$	V, F, P V, F, P V, F, P V, F, P V, F, P C, F, P V, F, P V, F, P	$\mathcal{U}(3, 10)$ 2.998×10^8 $\mathcal{U}(1, 2)$ $\mathcal{U}_{\log}(10^6, 10^8)$
II.6.11	$\phi = \frac{1}{4\pi\epsilon} \frac{p \cos \theta}{r^2}$	$egin{array}{c} \phi & & & & & & & & & & & & & & & & & & $	Electric potential Vacuum permittivity Electric dipole moment Angle Distance	$V \ F/m \ C \cdot m \ rad \ m$	$kg \cdot m^2 \cdot s^{-3} \cdot A^{-1}$ $kg^{-1} \cdot m^{-3} \cdot s^4 \cdot A^{-1}$ $m \cdot s \cdot A$ 1 m		$\mathcal{U}(1,3)$ $\mathcal{U}_{\log}(10^{-22},10^{-20})$ N $\mathcal{U}(1,3)$ $\mathcal{U}(0,2\pi)$
II.8.7	$U = \frac{3}{5} \frac{Q^2}{4\pi\epsilon a}$	U Q ϵ a	Energy Electric charge Vacuum permittivity Radius	$J \\ C \\ F/m \\ m$	$kg \cdot m^{2} \cdot s^{-2}$ $s \cdot A$ $kg^{-1} \cdot m^{-3} \cdot s^{4} \cdot A$ m	V, F, P V, F, P V, F, P V, F V, F, P C, F, P V, F, P V, F, P	$\begin{array}{c cccc} N/A & N/A \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11},10^{-9}) \\ \mathcal{U}(1,5) & 8.854 \times 10^{-12} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-12},10^{-10}) \end{array}$
II.11.3	$x = \frac{qE}{m(\omega_0^2 - \omega^2)}$	x q E m ω_0	Position Electric charge Magnitude of electric field Mass Angular velocity	$m \ C \ V/m \ kg \ rad/s$	$m \\ s \cdot A \\ kg \cdot m \cdot s^{-3} \cdot A^{-1} \\ kg \\ s^{-1}$	V, F, P V, F V, F, P V, F V, F, P V, F, P V, F, P V, F, P V, F, P V, F	N/A N/A $\mathcal{U}(1,3)$ $\mathcal{U}_{\log}(10^{-11},10^{-9})$ $\mathcal{U}(1,3)$ $\mathcal{U}_{\log}(10^{-9},10^{-7})$ $\mathcal{U}(1,3)$ $\mathcal{U}_{\log}(10^{-28},10^{-26})$ $\mathcal{U}(3,5)$ $\mathcal{U}_{\log}(10^{9},10^{11})$
II 21 22	ф —	$\frac{\omega}{\phi}$ q ϵ	Angular velocity Electric potential Electric charge Vacuum permittivity	rad/s V C F/m	s^{-1} $kg \cdot m^2 \cdot s^{-3} \cdot A^{-1}$ $s \cdot A$ $kg^{-1} \cdot m^{-3} \cdot s^4 \cdot A$	V, F, P V, F V, F, P V, F V, F, P V, F	$\begin{array}{ccc} \mathcal{U}(0,0) & \mathcal{U}_{\mathrm{log}}(10^{9},10^{11}) \\ \mathcal{U}(1,2) & \mathcal{U}_{\mathrm{log}}(10^{9},10^{11}) \\ \mathrm{N/A} & \mathrm{N/A} \\ \mathcal{U}(1,5) & \mathcal{U}_{\mathrm{log}}(10^{-3},10^{-1}) \\ \mathcal{U}(1,5) & 8.854 \times 10^{-12} \end{array}$
II.21.32	$\phi = \frac{q}{4\pi\epsilon r(1-v/c)}$	r v c	Distance Velocity Speed of light Magnetic moment	$m \\ m/s \\ m/s \\ J/T$	m $m \cdot s^{-1}$ $m \cdot s^{-1}$ $m^2 \cdot A$	V, F, P V, F, P V, F, P V, F, P V, F, P C, F, P V, F, P V, F	N/A N/A
II.34.2	$\mu = \frac{qvr}{2}$	$egin{array}{c} q & & \\ v & & \\ r & & \\ \hline I & & \end{array}$	Electric charge Velocity Radius Electric Current	$C \\ m/s \\ m \\ A$	$ \begin{array}{c} s \cdot A \\ m \cdot s^{-1} \\ m \\ A \end{array} $	$ \begin{array}{cccc} V, F, P & V, F \\ V, F, P & V, F \\ V, F, P & V, F, P \\ \hline V, F, P & V, F \end{array} $	$ \begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11},10^{-9}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{5},10^{7}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11},10^{-9}) \\ \hline N/A & N/A \\ \end{array} $
II.34.2a	$I = \frac{qv}{2\pi r}$	q v r μ	Electric charge Velocity Radius Bohr magneton	C m/s m J/T	$ \begin{array}{c} s \cdot A \\ m \cdot s^{-1} \\ m \\ m^2 \cdot A \end{array} $	V, F, P V, F V, F, P V, F, P V, F, P V, F, P V, F, P V, F	N/A N/A
II.34.29a	, 4ππ	q h m E	Electric charge Planck constant Mass Energy of magnetic field Magnetic moment	$C \ J \cdot s \ kg \ J \ J/T$	$ \begin{array}{c} s \cdot A \\ kg \cdot m^2 \cdot s^{-1} \\ \qquad $	$\begin{array}{cccc} V,F,P & V,F \\ V,F,P & C,F,P \\ V,F,P & V,F,P \\ \hline V,F,P & V,F \\ V,F,P & V,F \end{array}$	
II.37.1	$E = \mu(1+\chi)B$	$ \begin{array}{c} \mu \\ \chi \\ B \\ \hline n \\ h \end{array} $	Volume magnetic susceptibility Magnetic field strength Average number of photons Planck constant	T T $J \cdot s$	$kg \cdot s^{-2} \cdot A^{-1}$ $kg \cdot m^2 \cdot s^{-1}$	V, F, P V, F V, F, P V, F V, F, P V, F, P V, F, P C, F, P	$\begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^4,10^6) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-3},10^{-1}) \\ \hline N/A & N/A \\ \mathcal{U}(1,5) & 6.626 \times 10^{-34} \end{array}$
III.4.32	$n = \frac{1}{\exp(\hbar\omega/2\pi kT) - 1}$	$ \begin{array}{c} \omega \\ k \\ T \\ C ^2 \end{array} $	Frequency Boltzmann constant Temperature Probability Frequency	rad/s J/K K 1	$kg \cdot m^2 \cdot s^{-2} \cdot K^{-1}$ K 1	V, F, P V, F, P V, F, P C, F, P V, F, P V, F, P V, F V, F, NN	$\begin{array}{ccc} \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^8,10^{10}) \\ \mathcal{U}(1,5) & 1.381 \times 10^{-23} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^1,10^3) \\ \hline \text{N} & \text{N/A} & \text{N/A} \end{array}$
III.8.54	$ C ^2 = \sin^2\left(\frac{2\pi At}{h}\right)$	A t h v	Energy Time Planck constant Speed of the waves	J s $J \cdot s$ m/s	$kg \cdot m^2 \cdot s^{-2}$ s $kg \cdot m^2 \cdot s^{-1}$ $m \cdot s^{-1}$	V, F, P C, F, P V, F, P	N/A N/A
III.13.18	$v = \frac{4\pi A b^2}{h} k$	A b k h	Energy Lattice constant Wavenumber Planck constant	J m $1/m$ $J \cdot s$	$kg \cdot m^2 \cdot s^{-2}$ m m^{-1} $kg \cdot m^2 \cdot s^{-1}$	V, F, P V, F V, F, P V, F, P V, F, P V, F, P V, F, P C, F, P	$\mathcal{U}(1,5)$ $\mathcal{U}_{\log}(10^{-1},10^1)$ $\mathcal{U}(1,5)$ 6.626×10^{-34}
III.14.14	$I = I_0 \left(\exp \left(q\Delta V / \kappa T \right) - 1 \right)$	I I_0 q ΔV κ	Electric Current Electric current Electric charge Voltage Boltzmann constant	$A \\ A \\ C \\ V \\ J/K$	$A\\ s\cdot A\\ kg\cdot m^2\cdot s^{-3}\cdot A^{-1}\\ kg\cdot m^2\cdot s^{-2}\cdot K^{-1}$	V, F, P V, F V, F, P V, F V, F, P V, F, P V, F, P V, F V, F, P C, F, P	$\mathcal{U}(1,2)$ $\mathcal{U}_{\log}(10^{-1},10^1)$
		$\frac{\kappa}{T}$	Temperature Energy Amplitude	J/K K J	$\frac{K}{kg \cdot m^2 \cdot s^{-2}}$ $kg \cdot m^2 \cdot s^{-2}$ $kg \cdot m^2 \cdot s^{-2}$	V, F, P C, F, P V, F, P V, F, P V F P V F P	$\frac{\mathcal{U}(1,2)}{\mathrm{N/A}}$ $\frac{\mathcal{U}_{\mathrm{log}}(10^{1},10^{3})}{\mathrm{N/A}}$

J

1/m

m

kg

 $J \cdot s$

m/s

m

1

1

rad

J

kg

C

F/m

 $J \cdot s$

J

J

kg

m/s

rad

 kg/m^3

 $m^3 \cdot kg^{-1} \cdot s^{-2}$

m/s

 $1/m^2$

m

1/s

 $kg \cdot m^2 \cdot s^{-2}$ $kg \cdot m^2 \cdot s^{-2}$

 m^{-1}

m

kg

 $kg \cdot m^2 \cdot s^{-1}$ $m \cdot s^{-1}$

1

1

1

1

kg

 $s\cdot A$

 $kg\cdot m^2\cdot s^{-1}$

1

J $kg\cdot m^2\cdot s^{-2}$

 $m \cdot s^{-1}$

 $\overline{kg \cdot m}$

 $m \cdot s^{-1}$ m^{-2}

m s^{-1}

 $kg^{-1} \cdot m^3$

 $kg \cdot m^2 \cdot s^2$

N/A

 $\mathcal{U}(0,2\pi)$

N/A

 6.626×10^{-34}

 $\mathcal{U}_{\log}(10^0, 10^2)$

N/A $U_{log}(10^{-24}, 10^{-22})$

 9.109×10^{-31}

 2.998×10^{8}

 $\mathcal{U}(-\pi,\pi)$

N/A 6.674×10^{-11}

 2.998×10^{8} $\mathcal{U}_{\log}(10^{1}, 10^{3})$ $\mathcal{U}_{\log}(10^{8}, 10^{10})$

 $\mathcal{U}_{\log}(10^0, 10^2)$

 $\begin{array}{cccc} \text{IV/A} & \text{N/A} \\ \mathcal{U}(1,5) & 6.626 \times 10^{-34} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-18},10^{-16}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-10},10^{-8}) \\ \hline \text{N/A} & \text{N/A} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-18},10^{-16}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-18},10^{-16}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-25}) \end{array}$

 $\begin{array}{lll} & & & ^{18/A} \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-30}, 10^{-28}) \\ \mathcal{U}(1,5) & \mathcal{U}_{\log}(10^{-11}, 10^{-9}) \\ \mathcal{U}(1,5) & & 8.854 \times 10^{-12} \end{array}$

V, F, P

 $V, F, P \quad C, F, P \quad \mathcal{U}(1,5)$

V, F, P

V, F, P V, F, P V, F, P

V, F

V, F, P V, F, NN U(1, 5)

V, F, P

V, F

V, F, P

 $V, F, P \quad V, F, P \quad \mathcal{U}(1,3)$

 $V, F, P \quad C, F, P \quad \mathcal{U}(1,3)$

 $V,\,F,\,P\quad C,\,F,\,P\quad \, \mathcal{U}(1,3)$

V, F

V, F

C, F, P

V, F $V, F, P \quad V, F, P \quad \mathcal{U}(1,5)$

V, F

V, F, P V, F, P

V, F, P V, F, P

V, F, P C, F, P

V, F, P V, I, P

 $V,\,F,\,P\quad C,\,F,\,P$

N/A

N/A

N/A

U(1, 5)

U(1, 5)

U(1, 5)

N/A

 $\mathcal{U}(1,3)$

N/A

U(1, 5)

U(1, 5)

U(1, 5)

 $\mathcal{U}(1,5)$

V, F, P

V, F, P

V, F

V, F, P

V, F, P

V, F, P

V, F, P

<u>V, F</u>, P

V, F, P

V, F, P

V, F, P

V, F, P

 $kg^{-1} \cdot m^{-3} \cdot s^4 \cdot A^2$ V, F, P C, F, P

 ${\bf Propagation}\ coefficient$

Lattice constant

Planck constant

Lattice constant

Electric charge

Planck constant

 ${\bf Electron\ mass}$

Speed of light

Incidence angle

Speed of light

Hubble's constant

Number of protons

Electromagnetic energy

Gravitational constant

Curvature of the Universe

 ${\bf Vacuum\ permittivity}$

Effective mass

 ${\bf Amplitude}$

Amplitude

Distribution

Variable

Variable

Angle

Energy

Energy

Density

Distance

Mass

A

k

d

m

h

A

b

f

β

 α

 θ

E

m

q

h

U

E

m

G

 a_{f}

 $E = 2A \left(1 - \cos\left(kd\right) \right)$

 $m=\frac{h^2}{8\pi^2Ab^2}$

 $f = \beta(1 + \alpha\cos\theta)$

 $E = -\frac{mq^4}{2(4\pi\epsilon)^2(h/(2\pi))^2 n^2}$

 $U = \frac{E}{1 + \frac{E}{mc^2} (1 - \cos \theta)}$

 $\rho = \frac{3}{8\pi G} \left(\frac{c^2 k_{\rm f}}{a_{\rm f}^2} + H^2 \right)$

III.15.12

III.15.14

III.17.37

III.19.51

В8

B18