

OPERATION	FORMULA NAME	FORMULA
$\frac{5}{4}$ FMLA	Centrifugal force (1)	$F = m r \omega^2$
$\frac{5}{5}$ FMLA	Centrifugal force (2)	$F = \frac{m v^2}{r}$
$\frac{5}{6}$ FMLA	Potential energy	$U p = m g h$
$\frac{5}{7}$ FMLA	Kinetic energy	$U k = \frac{1}{2} m v^2$
$\frac{5}{8}$ FMLA	Elastic energy	$U p = \frac{1}{2} k x^2$
$\frac{5}{9}$ FMLA	Energy of rotational body	$E = \frac{1}{2} I \omega^2$
$\frac{6}{0}$ FMLA	Sound intensity	$I = \frac{P}{4 \pi r^2}$
$\frac{6}{1}$ FMLA	Velocity of wave transmitted by a chord	$v = \sqrt{\frac{T}{\sigma}}$
$\frac{6}{2}$ FMLA	Doppler effect	$f = f_0 \frac{v - u}{v - v_0}$
$\frac{6}{3}$ FMLA	Relative index of refraction	$n = \frac{\sin i}{\sin r}$
$\frac{6}{4}$ FMLA	Critical angle of incidence	$\sin i c = \frac{1}{n_{12}}$
$\frac{6}{5}$ FMLA	Equation of state of ideal gas (1)	$P = \frac{n R T}{V}$
$\frac{6}{6}$ FMLA	Equation of state of ideal gas (2)	$V = \frac{n R T}{P}$
$\frac{6}{7}$ FMLA	Equation of state of ideal gas (3)	$T = \frac{P V}{n R}$
$\frac{6}{8}$ FMLA	Equation of state of ideal gas (4)	$n = \frac{P V}{R T}$
$\frac{6}{9}$ FMLA	Quantity of heat	$Q = m c t$
$\frac{7}{0}$ FMLA	Coulomb's law	$F = \frac{1}{4 \pi \epsilon_0} \frac{Q q}{r^2}$
$\frac{7}{1}$ FMLA	Magnetic force	$F = i B l \sin \theta$
$\frac{7}{2}$ FMLA	Resistance of a conductor	$R = \rho \frac{l}{S}$

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$\frac{7}{3}$ FMLA	Frequency of electric oscillation	$f = \frac{1}{2 \pi \sqrt{L C}}$
$\frac{7}{4}$ FMLA	Average gaseous molecular speed	$v = \sqrt{\frac{3 R T}{M}}$
$\frac{7}{5}$ FMLA	Electronic kinetic energy in magnetic field	$T = \frac{q^2 B^2 R^2}{2 m}$

## ■ ELECTRICITY/ELECTRONICS

$\frac{7}{6}$ FMLA	Strength of electric field	$E = \frac{Q}{4 \pi \epsilon_0 r^2}$
$\frac{7}{7}$ FMLA	Energy density stored in electrostatic field (1)	$W = \frac{1}{2} E D$
$\frac{7}{8}$ FMLA	Energy density stored in electrostatic field (2)	$W = \frac{1}{2} \epsilon E^2$
$\frac{7}{9}$ FMLA	Energy stored in electrostatic capacity (1)	$W = \frac{1}{2} C V^2$
$\frac{8}{0}$ FMLA	Energy stored in electrostatic capacity (2)	$W = \frac{1}{2} \frac{Q^2}{C}$
$\frac{8}{1}$ FMLA	Energy stored in electrostatic capacity (3)	$W = \frac{1}{2} Q V$
$\frac{8}{2}$ FMLA	Force exerting on magnetic pole	$F = m H$
$\frac{8}{3}$ FMLA	Magnetic energy of inductance	$W = \frac{1}{2} L I^2$
$\frac{8}{4}$ FMLA	Electrostatic capacity between parallel plates	$C = \frac{\epsilon S}{d}$
$\frac{8}{5}$ FMLA	Impedance in LR series circuit	$Z = \sqrt{R^2 + (2 \pi f L)^2}$
$\frac{8}{6}$ FMLA	Impedance in RC series circuit	$Z = \sqrt{R^2 + \frac{1}{(2 \pi f C)^2}}$
$\frac{8}{7}$ FMLA	Composite reactance in LC series circuit	$X = 2 \pi f L - \frac{1}{2 \pi f C}$
$\frac{8}{8}$ FMLA	Impedance in LRC series circuit	$Z = \sqrt{R^2 + \left(2 \pi f L - \frac{1}{2 \pi f C}\right)^2}$
$\frac{8}{9}$ FMLA	Impedance in LRC parallel circuit	$Z = \frac{1}{\sqrt{\left(\frac{1}{R}\right)^2 + \left(2 \pi f C - \frac{1}{2 \pi f L}\right)^2}}$