

# Conversion Tables

Note: To convert from A to B, multiply by the entry in the table.

## Angular Velocity Conversion

A	B	deg/s	rad/s	rpm	rps
deg/s		1	$1.75 \times 10^{-2}$	0.167	$2.78 \times 10^{-3}$
rad/s		57.3	1	9.55	0.159
rpm		6	0.105	1	$1.67 \times 10^{-2}$
rps		360	6.28	60	1

## Force Conversion

A	B	lb <sub>f</sub>	N	dyne	oz <sub>f</sub>	kg <sub>f</sub>	g <sub>f</sub>
lb <sub>f</sub>		1	4.4482	$4.448 \times 10^5$	16	0.45359	453.6
N		0.22481	1	100.000	3.5967	0.10197	----
dyne		$2.248 \times 10^{-6}$	0.00001	1	$3.59 \times 10^{-5}$	----	980.6
oz <sub>f</sub>		0.0625	0.27801	$2.78 \times 10^4$	1	0.02835	28.35
kg <sub>f</sub>		2.205	9.80665	----	35.274	1	1000
g <sub>f</sub>		$2.205 \times 10^{-3}$	----	$1.02 \times 10^{-3}$	0.03527	0.001	1

Notes:

lb<sub>f</sub> = 1 slug x 1 ft/s<sup>2</sup>

N = 1 kg x 1 m/s<sup>2</sup>

dyne = 1 g x 1 cm/s<sup>2</sup>

## Length Conversion

A	B	in	ft	μm	mm	cm	m
in		1	0.0833	$2.54 \times 10^4$	25.4	2.54	0.0254
ft		12	1	$3.048 \times 10^5$	304.8	30.48	0.3048
μm		$3.937 \times 10^{-5}$	$3.281 \times 10^{-6}$	1	0.001	$1.0 \times 10^{-4}$	$1.0 \times 10^{-6}$
mm		0.03937	0.00328	1000	1	0.1	0.001
cm		0.3937	0.03281	$1.0 \times 10^4$	10	1	0.01
m		39.37	3.281	$1.0 \times 10^6$	1000	100	1

## Power Conversion

A	B	Watts	kW	Horsepower (English)	Horsepower (metric)	ft-lb/s	in-lb/s
Watts		1	$1 \times 10^{-3}$	$1.34 \times 10^{-3}$	$1.36 \times 10^{-3}$	0.74	8.88
kW		1000	1	1.34	1.36	738	8880
Horsepower (English)		746	0.746	1	1.01	550	6600
Horsepower (metric)		736	0.736	0.986	1	543	6516
ft-lb/s		1.35	$1.36 \times 10^{-3}$	$1.82 \times 10^{-3}$	$1.84 \times 10^{-3}$	1	12
in-lb/s		0.113	$1.13 \times 10^{-4}$	$1.52 \times 10^{-4}$	$1.53 \times 10^{-4}$	$8.3 \times 10^{-2}$	1

## Conversion Tables CONTINUED

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## Mass Conversion

A	B	g	kg	slug	lb <sub>m</sub>	oz <sub>m</sub>
g		1	0.001	$6.852 \times 10^{-5}$	$2.205 \times 10^{-3}$	0.03527
kg		1000	1	$6.852 \times 10^{-2}$	2.205	35.274
slug		14590	14.59	1	32.2	514.72
lb <sub>m</sub>		453.6	0.45359	0.0311	1	16
oz <sub>m</sub>		28.35	0.02835	$1.94 \times 10^{-3}$	0.0625	1

## Linear Velocity Conversion

A	B	in/min	ft/min	in/s	ft/s	mm/s	m/s
in/min		1	0.0833	0.0167	$1.39 \times 10^{-3}$	0.42	$4.2 \times 10^{-4}$
ft/min		12	1	.2	0.0167	5.08	$5.08 \times 10^{-3}$
in/s		60	5	1	0.083	25.4	0.0254
ft/s		720	60	12	1	304.8	0.3048
cm/s		23.62	1.97	0.3937	0.0328	10	0.01
m/s		2362.2	196.9	39.37	3.281	1000	1

## Rotary Inertia Conversion

A	B	lb-in-s <sup>2</sup>	lb-ft-s <sup>2</sup>	lb-in <sup>2</sup>	lb-ft <sup>2</sup>	oz-in <sup>2</sup>	oz-in-s <sup>2</sup>	g-cm <sup>2</sup>	kg-cm <sup>2</sup>	g-cm-s <sup>2</sup>	kg-cm-s <sup>2</sup>	kg-m <sup>2</sup>
lb-in-s <sup>2</sup>		1	0.083	386.1	2.68	6177	16	$1.13E^{-6}$	1130	1152	1.152	0.113
lb-ft-s <sup>2</sup>		12.0	1	4633	32.2	$7.41E^{-4}$	192	$1.36E^{-7}$	$1.36E^{-4}$	$1.38E^{-4}$	13.83	1.36
lb-in <sup>2</sup>		0.0026	$2.16E^{-4}$	1	0.0069	16	0.041	2936	2.93	2.98	0.0030	$2.93E^{-4}$
lb-ft <sup>2</sup>		0.373	0.031	144	1	2304	5.97	$4.21E^{-5}$	421.4	429.7	0.430	0.0421
oz-in <sup>2</sup>		$1.62E^{-4}$	$1.35E^{-5}$	0.0625	$4.34E^{-4}$	1	0.0026	182.9	0.183	0.187	$1.87E^{-4}$	$1.83E^{-5}$
oz-in-s <sup>2</sup>		0.063	0.0052	24.13	0.168	386.1	1	$7.06E^{-4}$	70.62	72.0	0.072	0.007
g-cm <sup>2</sup>		$8.85E^{-7}$	$7.38E^{-8}$	$3.42E^{-4}$	$2.37E^{-6}$	0.0055	$1.42E^{-5}$	1	0.001	0.001	$1.02E^{-6}$	$1.00E^{-7}$
kg-cm <sup>2</sup>		$8.85E^{-4}$	$7.38E^{-5}$	0.342	0.0024	5.47	0.014	1000	1	1.02	0.001	0.0001
g-cm-s <sup>2</sup>		$8.68E^{-4}$	$7.23E^{-5}$	0.335	0.0023	5.36	0.014	981	0.981	1	0.001	$9.73E^{-5}$
kg-cm-s <sup>2</sup>		0.868	0.072	335.1	2.33	5362	13.89	$9.81E^{-5}$	981	1000	1	0.0973
kg-m <sup>2</sup>		8.85	0.738	3417.74	23.734	54683.91	141.6	$1.00E^{-7}$	10000	10282	10.282	1

## Torque Conversion

A	B	lb-in	lb-ft	oz-in	g-cm	kg-cm	kg-m	N-m
lb-in		1	0.083	16	1152	1.152	0.012	0.113
lb-ft		12	1	192	$1.38E^{-4}$	13.83	0.138	1.356
oz-in		0.063	$5.21E^{-3}$	1	72.01	0.072	$7.21E^{-4}$	$7.06E^{-3}$
g-cm		$8.68E^{-4}$	$7.23E^{-5}$	0.014	1	0.001	$1.0E^{-6}$	$9.81E^{-5}$
kg-cm		0.868	0.072	13.89	1000	1	0.01	0.098
kg-m		86.80	7.23	1389	$1.0E^{-6}$	100	1	9.81
N-m		8.851	0.738	141.6	$1.02E^{-4}$	10.20	0.102	1