

CONVERSION TABLES

Metric and English Equivalent Measures

Measures of Length

<i>Metric</i>		<i>English</i>
1 meter	=	39.37 inches, or 3.28083 feet, or 1.09361 yards
0.3048 meter	=	1 foot
1 centimeter	=	0.3937 inch
2.54 centimeters	=	1 inch
1 millimeter	=	0.03937 inch
25.4 millimeters	=	1 inch
1 kilometer	=	1093.61 yards, or 0.62137 mile

Measures of Weight

<i>Metric</i>		<i>English</i>
1 gram	=	15.432 grains
0.0648 gram	=	1 grain
28.35 grams	=	1 ounce avoirdupois
1 kilogram	=	2.2046 pounds
0.4536 kilogram	=	1 pound
1 metric ton	}	{ 0.9842 ton of 2240 pounds 9.68 cwt. 2204.6 pounds
1000 kilograms		
1.016 metric tons	}	1 ton of 2240 pounds
1016 kilograms		

Measures of Capacity

<i>Metric</i>		<i>English</i>
1 liter (= 1 cubic decimeter)	=	{ 61.023 cubic inches 0.03531 cubic foot 0.2642 gallons (American) 2.202 pounds of water at 62°F
28.317 liters	=	1 cubic foot
3.785 liters	=	1 gallon (American)
4.543 liters	=	1 gallon (Imperial)

2 Conversion Tables

English Conversion Table

Length			
Inches	×	0.0833	= feet
Inches	×	0.02778	= yards
Inches	×	0.00001578	= miles
Feet	×	0.3333	= yards
Feet	×	0.0001894	= miles
Yards	×	36.00	= inches
Yards	×	3.00	= feet
Yards	×	0.0005681	= miles
Miles	×	63360.00	= inches
Miles	×	5280.00	= feet
Miles	×	1760.00	= yards
Circumference of circle	×	0.3188	= diameter
Diameter of circle	×	3.1416	= circumference

Area			
Square inches	×	0.00694	= square feet
Square inches	×	0.0007716	= square yards
Square feet	×	144.00	= square inches
Square feet	×	0.11111	= square yards
Square yards	×	1296.00	= square inches
Square yards	×	9.00	= square feet
Dia. of circle squared	×	0.7854	= area
Dia. of sphere squared	×	3.1416	= surface

Volume			
Cubic inches	×	0.0005787	= cubic feet
Cubic inches	×	0.00002143	= cubic yards
Cubic inches	×	0.004329	= U.S. gallons
Cubic feet	×	1728.00	= cubic inches
Cubic feet	×	0.03704	= cubic yards
Cubic feet	×	7.4805	= U.S. gallons
Cubic yards	×	46656.00	= cubic inches
Cubic yards	×	27.00	= cubic feet
Diameter of sphere cubed	×	0.5236	= volume

Weight			
Grains (avoirdupois)	×	0.002286	= ounces
Ounces (avoirdupois)	×	0.0625	= pounds
Ounces (avoirdupois)	×	0.00003125	= tons
Pounds (avoirdupois)	×	16.00	= ounces

English Conversion Table (continued)**Weight**

Pounds (avoirdupois)	×	0.01	= hundred-weight
Pounds (avoirdupois)	×	0.0005	= tons
Tons (avoirdupois)	×	32000.00	= ounces
Tons (avoirdupois)	×	2000.00	= pounds

Energy

Horsepower	×	33000	= foot-pounds per minute
British thermal units	×	778.26	= foot-pounds
Ton of refrigeration	×	200	= British thermal units per minute

Pressure

Pounds per square inch	×	2.31	= feet of water (60°F)
Feet of water (60°F)	×	0.433	= pounds per square inch
Inches of water (60°F)	×	0.0361	= pounds per square inch
Pounds per square inch	×	27.70	= inches of water (60°F)
Inches of mercury (60°F)	×	0.490	= pounds per square inch

Power

Horsepower	×	746	= watts
Watts	×	0.001341	= horsepower
Horsepower	×	42.4	= British thermal units per minute

Water Factors (at point of greatest density—39.2°F)

Miners inch (of water)	×	8.976	= U.S. gallons per minute
Cubic inches (of water)	×	0.57798	= ounces
Cubic inches (of water)	×	0.036124	= pounds
Cubic inches (of water)	×	0.004329	= U.S. gallons
Cubic inches (of water)	×	0.003607	= English gallons
Cubic feet (of water)	×	62.425	= pounds
Cubic feet (of water)	×	0.03121	= tons
Cubic feet (of water)	×	7.4805	= U.S. gallons
Cubic inches (of water)	×	6.232	= English gallons

(continued)

4 Conversion Tables

English Conversion Table (continued)

<i>Water Factors (at point of greatest density—39.2°F)</i>			
Cubic foot of ice	×	57.2	= pounds
Ounces (of water)	×	1.73	= cubic inches
Pounds (of water)	×	26.68	= cubic inches
Pounds (of water)	×	0.01602	= cubic feet
Pounds (of water)	×	0.1198	= U.S. gallons
Pounds (of water)	×	0.0998	= English gallons
Tons (of water)	×	32.04	= cubic feet
Tons (of water)	×	239.6	= U.S. gallons
Tons (of water)	×	199.6	= English gallons
U.S. gallons	×	231.00	= cubic inches
U.S. gallons	×	0.13368	= cubic feet
U.S. gallons	×	8.345	= pounds
U.S. gallons	×	0.8327	= English gallons
U.S. gallons	×	3.785	= liters
English gallons (Imperial)	×	227.41	= cubic inches
English gallons (Imperial)	×	0.1605	= cubic feet
English gallons (Imperial)	×	10.02	= pounds
English gallons (Imperial)	×	1.201	= U.S. gallons
English gallons (Imperial)	×	4.546	= liters

Metric Conversion Table

<i>Length</i>			
Millimeters	×	0.03937	= inches
Millimeters	÷	25.4	= inches
Centimeters	×	0.3937	= inches
Centimeters	÷	2.54	= inches
Meters	×	39.37	= inches
			(Act. Cong.)
Meters	×	3.281	= feet
Meters	×	1.0936	= yards
Kilometers	×	0.6214	= miles
Kilometers	÷	1.6093	= miles
Kilometers	×	3280.8	= feet

Metric Conversion Table (continued)

Area			
Square millimeters	×	0.00155	= square inches
Square millimeters	÷	645.2	= square inches
Square centimeters	×	0.155	= square inches
Square centimeters	÷	6.452	= square inches
Square meters	×	10.764	= square inches
Square kilometers	×	247.1	= acres
Hectares	×	2.471	= acres
Volume			
Cubic centimeters	÷	16.387	= cubic inches
Cubic centimeters	÷	3.69	= fluid drams (U.S.P.)
Cubic centimeters	÷	29.57	= fluid ounces (U.S.P.)
Volume			
Cubic meters	×	35.314	= cubic feet
Cubic meters	×	1.308	= cubic yards
Cubic meters	×	264.2	= gallons (231 cubic inches)
Liters	×	61.023	= cubic inches (Act. Cong.)
Liters	×	33.82	= fluid ounces (U.S.I.)
Liters	×	0.2642	= gallons (231 cubic inches)
Liters	÷	3.785	= gallons (231 cubic inches)
Liters	÷	28.317	= cubic feet
Hectoliters	×	3.531	= cubic feet
Hectoliters	×	2.838	= bushels (2150.42 cubic inches)
Hectoliters	×	0.1308	= cubic yards
Hectoliters	×	26.42	= gallons (231 cubic inches)
Weight			
Grams	×	15.432	= grains (Act. Cong.)
Grams	÷	981	= dynes
Grams (water)	÷	29.57	= fluid ounces
Grams	÷	28.35	= ounces avoirdupois
Kilograms	×	2.2046	= pounds
Kilograms	×	35.27	= ounces avoirdupois

(continued)

6 Conversion Tables

Metric Conversion Table (continued)

Weight			
Kilograms	×	0.0011023	= tons (2000 pounds)
Tonneau	×	1.1023	= tons (2000 pounds)
(Metric ton)			
Tonneau	×	2204.6	= pounds
(Metric ton)			
Unit Weight			
Grams per cubic centimeter	+	27.68	= pounds per cubic inch
Kilogram per meter	×	0.672	= pounds per foot
Kilogram per cubic meter	×	0.06243	= pounds per cubic foot
Kilogram per cheval	×	2.235	= pounds per horsepower
Grams per liter	×	0.06243	= pounds per cubic foot
Pressure			
Kilograms per square centimeter	×	14.223	= pounds per square inch
Kilograms per square centimeter	×	32.843	= feet of water (60°F)
Atmospheres (International)	×	14.696	= pounds per square inch
Energy			
Joule	×	0.7376	= foot-pounds
Kilogram-meters	×	7.233	= foot-pounds
Power			
Cheval vapeur	×	0.9863	= horsepower
Kilowatts	×	1.341	= horsepower
Watts	+	746	= horsepower
Watts	×	0.7373	= foot-pounds per second

Standard Tables of Metric Measure — Linear Measure

Unit	Value, m	Symbol or Abbreviation
Micron	0.000001	μ
Millimeter	0.001	mm
Centimeter	0.01	cm
Decimeter	0.1	dm
Meter (unit)	1.0	m
Decameter	10.0	dcm
Hectometer	100.0	hm
Kilometer	1,000.0	km
Myriameter	10,000.0	Mm
Megameter	1,000,000.0	

Volume

Unit	Value, l	Symbol or Abbreviation
Milliliter	0.001	ml
Centiliter	0.01	cl
Deciliter	0.1	dl
Liter (unit)	1.0	l
Decaliter	10.0	dcl
Hectoliter	100.0	hl
Kiloliter	1,000.0	kl

Surface Measure

Unit	Value, m²	Symbol or Abbreviation
Square millimeter	0.000001	mm ²
Square centimeter	0.0001	cm ²
Square decimeter	0.01	dm ²
Square meter (centiare)	1.0	m ²
Square decameter (are)	100.0	a ²
Hectare	10,000.0	ha ²
Square kilometer	1,000,000.0	km ²

(continued)

Standard Tables of Metric Measure — Linear Measure
(continued)

Mass

<i>Unit</i>	<i>Value, g</i>	<i>Symbol or Abbreviation</i>
Microgram	0.000001	μg
Milligram	0.001	mg
Centigram	0.01	cg
Decigram	0.1	dg
Gram (unit)	1.0	g
Decagram	10.0	dcg
Hectogram	100.0	hg
Kilogram	1,000.0	kg
Myriagram	10,000.0	Mg
Quintal	100,000.0	q
Ton	1,000,000.0	

Cubic Measure

<i>Unit</i>	<i>Value, m³</i>	<i>Symbol or Abbreviation</i>
Cubic micron	10 ⁻¹⁰	μ ³
Cubic millimeter	10 ⁻⁹	mm ³
Cubic centimeter	10 ⁻⁶	cm ³
Cubic decimeter	10 ⁻³	dm ³
Cubic meter	1	m ³
Cubic decameter	10 ³	dcm ³
Cubic hectometer	10 ⁶	hm ³
Cubic kilometer	10 ⁹	km ³

Decimal and Millimeter Equivalents of Fractional Parts of an Inch

Parts of Inch	Decimal	Millimeters	Parts of Inch	Decimal	Millimeters
$\frac{1}{64}$	0.01563	0.397	$\frac{33}{64}$	0.51563	13.097
$\frac{1}{32}$	0.03125	0.794	$\frac{17}{32}$	0.53125	13.097
$\frac{3}{64}$	0.04688	1.191	$\frac{35}{64}$	0.54688	13.890
$\frac{1}{16}$	0.0625	1.587	$\frac{9}{16}$	0.5625	14.287
$\frac{5}{64}$	0.07813	1.984	$\frac{37}{64}$	0.57813	14.684
$\frac{3}{32}$	0.09375	2.381	$\frac{19}{32}$	0.59375	15.081
$\frac{7}{64}$	0.10938	2.778	$\frac{39}{64}$	0.60938	15.478
$\frac{1}{8}$	0.125	3.175	$\frac{5}{8}$	0.625	15.875
$\frac{9}{64}$	0.14063	3.572	$\frac{41}{64}$	0.64063	16.272
$\frac{3}{32}$	0.15625	3.969	$\frac{21}{32}$	0.65625	16.669
$\frac{11}{64}$	0.17188	4.366	$\frac{43}{64}$	0.67188	17.065
$\frac{3}{16}$	0.1875	4.762	$\frac{11}{16}$	0.6875	17.462
$\frac{13}{64}$	0.20313	5.159	$\frac{45}{64}$	0.70313	17.859
$\frac{7}{32}$	0.21875	5.556	$\frac{23}{32}$	0.71875	18.256
$\frac{15}{64}$	0.23438	5.953	$\frac{47}{64}$	0.73438	18.653
$\frac{1}{4}$	0.25	6.350	$\frac{3}{4}$	0.75	19.050
$\frac{17}{64}$	0.26563	6.747	$\frac{49}{64}$	0.76563	19.447
$\frac{9}{32}$	0.28125	7.144	$\frac{25}{32}$	0.78125	19.844
$\frac{19}{64}$	0.29688	7.541	$\frac{51}{64}$	0.79688	20.240
$\frac{5}{16}$	0.3125	7.937	$\frac{13}{16}$	0.8125	20.637
$\frac{21}{64}$	0.32813	8.334	$\frac{53}{64}$	0.82813	21.034
$\frac{11}{32}$	0.34375	8.731	$\frac{27}{32}$	0.84375	21.431
$\frac{23}{64}$	0.35938	9.128	$\frac{55}{64}$	0.85938	21.828
$\frac{3}{8}$	0.375	9.525	$\frac{7}{8}$	0.875	22.225
$\frac{25}{64}$	0.39063	9.922	$\frac{57}{64}$	0.89063	22.622
$\frac{13}{32}$	0.40625	10.319	$\frac{29}{32}$	0.90625	23.019
$\frac{27}{64}$	0.42188	10.716	$\frac{59}{64}$	0.92188	23.415
$\frac{7}{16}$	0.4375	11.113	$\frac{15}{16}$	0.9375	23.812
$\frac{29}{64}$	0.45313	11.509	$\frac{61}{64}$	0.95313	24.209
$\frac{15}{32}$	0.46875	11.906	$\frac{31}{32}$	0.96875	24.606
$\frac{31}{64}$	0.48438	12.303	$\frac{63}{64}$	0.98438	25.003
$\frac{1}{2}$	0.5	12.700	1	1.00000	25.400