

General Conversion Table

Multiply	by	to obtain	Multiply	by	to obtain
acres	43560	square feet	cubic inches	0.03463	pints (liq)
acres	4046.86	square meters	cubic inches	0.01732	quarts (liq)
acres	1.5625 x 10 ⁻³	square miles	cubic yards	7.646 x 10 ³	cubic centimeters
acres (varas)	5645.38	square varas	cubic yards	27	cubic feet
acres	4840	square yards	cubic yards	46656	cubic inches
amperes	0.10	abamperes	cubic yards	0.7646	cubic meters
amperes	2.99793 x 10 ⁹	statamperes	cubic yards	202.0	gallons US (liq)
atmospheres	76.0	cm. of mercury @ 0° C	cubic yards	764.6	liters
atmospheres	29.92	in. of mercury @ 32° F	cubic yards	1615.796	pints (liq)
atmospheres	33.90	feet of water @ 39.2° F	cubic yards	807.9	quarts (liq)
atmospheres	10333.32	kg. per sq. meter	cubic yards per min.	0.45	cubic feet per sec.
atmospheres	14.70	pounds per sq. inch	cubic yards per min.	3.3662	gallons per sec.
atmospheres	1.05811	tons per sq. foot	cubic yards per min.	12.742	liters per sec.
British thermal units	0.2520	kilogram-calories	degrees (angle)	60	minutes
British thermal units	777.649	foot-pounds	degrees (angle)	0.01745	radians
British thermal units	3.927 x 10 ⁻⁴	horse-power-hours	degrees (angle)	3600	seconds
British thermal units	1054.35	joules	dynes	1.020 x 10 ⁻³	grams
British thermal units	107.514	kilogram-meters	dynes	7.233 x 10 ⁻⁵	poundals
British thermal units	2.928 x 10 ⁻⁴	kilowatt-hours	dynes	2.248 x 10 ⁻⁶	pounds
B.t.u per min	12.97	foot-pounds per sec.	ergs	9.4845 x 10 ⁻¹¹	British thermal units
B.t.u per min	.02358	horse-power	ergs	1	dyne-centimeters
B.t.u per min	.01758	kilowatts	ergs	7.376 x 10 ⁻⁸	foot-pounds
B.t.u per min	17.576	watts	ergs	1.020 x 10 ⁻³	gram-centimeters
B.t.u per sq. ft. per min	.1221	watts per sq. inch	ergs	1 x 10 ⁻⁷	joules
US bushels	1.244	cubic feet	ergs	2.390 x 10 ⁻¹¹	kilogram-calories
US bushels	2150.42	cubic inches	ergs	1.0197 x 10 ⁻⁸	kilogram-meters
US bushels	0.03524	cubic meters	feet	30.48	centimeters
US bushels	4	pecks	feet	12	inches
US bushels	64	pints (dry) US	feet	0.3048	meters
US bushels	32	quarts (dry) US	feet	0.3636	varas
centimeters	.3937	inches	feet	0.33333	yards
centimeters	0.01	meters	feet of water	0.02950	atmospheres
centimeters	393.7	mils	feet of water	0.8826	inches of mercury @ 32° F
centimeters	10	millimeters	feet of water	304.8	kgs. per sq. meter
centimeters-grams	980.7	centimeters-dynes	feet of water	62.424	pounds per sq. foot
centimeters-grams	1 x 10 ⁻⁵	meter-kilograms	feet of water	0.433501	pounds per sq. inch
centimeters-grams	7.233 x 10 ⁻⁵	pound-feet	foot-pounds	1.286 x 10 ⁻³	British thermal units
centimeters of mercury	0.01316	atmospheres	foot-pounds	1.356 x 10 ⁻⁷	ergs
centimeters of mercury	0.4461	feet of water	foot-pounds	5.0505 x 10 ⁻⁷	horse-power-hours
centimeters of mercury	136	kgs. per sq. meter	foot-pounds	1,356	joules
centimeters of mercury	27.85	pounds per sq. foot	foot-pounds	3.241 x 10 ⁻⁴	kilogram-calories
centimeters of mercury	0.1934	pounds per sq. inch	foot-pounds	0.1383	kilogram-meters
centimeters per second	1.969	feet per minute	foot-pounds	3.766 x 10 ⁻⁷	kilowatt-hours
centimeters per second	0.03281	feet per second	foot-pounds per min.	1.286 x 10 ⁻³	B.t. units per min.
centimeters per second	0.036	kilometers per hour	foot-pounds per min.	0.01667	foot-pounds per sec.
centimeters per second	0.6	meters per minute	foot-pounds per min.	3.030 x 10 ⁻⁵	horse-power
centimeters per second	0.02237	miles per hour	foot-pounds per min.	3.241 x 10 ⁻⁴	kg-calories per min.
centimeters per second	3.73 x 10 ⁻⁴	miles per minute	foot-pounds per min.	2.260 x 10 ⁻⁵	kilowatts
cubic centimeters	3.531 x 10 ⁻⁵	cubic feet	foot-pounds per sec.	7.717 x 10 ⁻²	B.t. units per min.
cubic centimeters	6.102 x 10 ⁻²	cubic inches	foot-pounds per sec.	1.818 x 10 ⁻³	horse-power
cubic centimeters	1 x 10 ⁻⁶	cubic meters	foot-pounds per sec.	1.945 x 10 ⁻²	kg-calories per min.
cubic centimeters	1.308 x 10 ⁻⁶	cubic yards	foot-pounds per sec.	1.356 x 10 ⁻³	kilowatts
cubic centimeters	2.642 x 10 ⁻⁴	gallons (liq.)	gallons US 1:g	8.345	pounds of water @ 60° F
cubic centimeters	1 x 10 ⁻³	liters	gallons US 1:g	3785.41	cubic centimeters
cubic centimeters	2.113 x 10 ⁻³	pints (liq.)	gallons US 1:g	0.1337	cubic feet
cubic centimeters	1.057 x 10 ⁻²	quarts (liq.)	gallons US 1:g	231	cubic inches
cubic feet	62.43	pounds of water @ 32° F	gallons US 1:g	3.785 x 10 ⁻³	cubic meters
cubic feet	28316.8	cubic centimeters	gallons US 1:g	4.951 x 10 ⁻³	cubic yards
cubic feet	1728	cubic inches	gallons US 1:g	3.7854	liters
cubic feet	0.02832	cubic meters	gallons US 1:g	8	pints (liq)
cubic feet	0.03704	cubic yards	gallons US 1:g	4	quarts (liq)
cubic feet	7.481	gallons US 1:g	gallons per min.	2.228 x 10 ⁻³	cubic ft. per sec.
cubic feet	28.32	liters	gallons per min.	0.06308	liters per sec.
cubic feet	59.84	pints (liq)	grains (troy)	1	grains (av.)
cubic feet	29.922	quarts (liq)	grains (troy)	0.06480	grams
cubic feet per minute	471.95	cubic cms. per. sec.	grains (troy)	0.04167	pennyweights (troy)
cubic feet per minute	0.1247	gallons per sec.	grams	980.7	dynes
cubic feet per minute	0.4720	liters per sec.	grams	15.4324	grains (troy)
cubic feet peer minute	62.4	lbs. pf water per min. @ 32° F	grams	0.001	kilograms
cubic inches	16.39	cubic centimeters	grams	1000	milligrams
cubic inches	5.787 x 10 ⁻⁴	cubic feet	grams	0.03527	ounces
cubic inches	1.639 x 10 ⁻⁵	cubic meters	grams	0.03215	ounces (troy)
cubic inches	2.143 x 10 ⁻⁵	cubic yards	grams	0.07093	poundals
cubic inches	4.329 x 10 ⁻³	gallons	grams	2.205 x 10 ⁻³	pounds
cubic inches	1.639 x 10 ⁻²	liters	horse-power	42.375	B.t. units per min.

General Conversion Table

Multiply	by	to obtain	Multiply	by	to obtain
horse-power	33000	foot-pounds per min.	miles per hour	1.6093	kilometers per hour
horse-power	550	foot-pounds per sec.	miles per hour	0.868976	knots per hour
horse-power	1.0139	horse-power metric	miles per hour	26.822	meters per minute
horse-power	10.70	kg.-calories per min.	miles per hour per sec.	44.704	cms. per sec. per sec.
horse-power	0.7457	kilowatts	miles per hour per sec.	1.467	ft. per sec. per sec.
horse-power	745.7	watts	miles per hour per sec.	1.6093	kms. per hr. per sec.
horse-power (boiler)	33445.7	B.t. units per hour	miles per hour per sec.	0.4470	M. per sec. per sec.
horse-power (boiler)	9.8095	kilowatts	months mean calendar	30.42	days
horse-power-hours	2547	British thermal units	months mean calendar	730	hours
horse-power-hours	1.98 x 10 ⁶	foot-pounds	months lunar calendar	42524.05	minutes solar
horse-power-hours	2.684 x 10 ⁶	joules	months lunar calendar	2.551 x 10 ⁶	seconds solar
horse-power-hours	641.2	kilogram-calories	ounces	8	drams
horse-power-hours	2.737 x 10 ⁵	kilogram-meters	ounces	480	grains
horse-power-hours	0.7457	kilowatt-hours	ounces	31.1035	grams
inches	2.540	centimeters	ounces	0.06857	pounds
inches	1000	mils	ounces per sq. inch	0.0625	pounds per sq. inch
inches	0.03	varas	ounces per sq. inch	33.6003	cubic inches
inches of mercury @ 60° F	0.033327	atmospheres	pints (dry)	28.875	cubic inches
inches of mercury	1.133	feet of water @ 39.2 ° F	pints (liq)	444822.166	dynes
inches of mercury @ 32° F	345.3	kg. per sq. meter	pounds	ardp	grains
inches of mercury @ 32° F	70.73	pounds per sq. foot	pounds	ardp	grams
inches of mercury @ 32° F	0.4912	pounds per sq. inch	pounds	16	ounces
inches of mercury @ 4° C	0.002458	atmospheres	pounds force	32.17	poundals
inches of mercury @ 4° C	0.07355	inches of mercury at 32° C	pounds of water @ 0° C	0.01602	cubic feet
inches of mercury @ 4° C	25.40	kg. per sq. meter	pounds of water @ 0° C	27.68	cubic inches
inches of mercury @ 4° C	0.5781	ounces per sq. inch	pounds of water @ 0° C	0.1198	gallons
inches of mercury @ 4° C	5.202	pounds per sq. foot	pounds of water per min.	2.669 x 10 ⁻⁴	cubic ft. per sec.
inches of mercury @ 4° C	0.03613	pounds per sq. inch	pounds per cubic foot	0.01602	grams per cubic cm.
kilograms	980665	dynes	pounds per cubic foot	16.02	kgs. per cubic meter
kilograms	1000	grams	pounds per cubic foot	5.787 x 10 ⁻⁴	pounds per cubic inch
kilograms	70.9316	poundals	pounds per cubic foot	5.456 x 10 ⁻⁹	pounds per mil. ft.
kilograms	2.20462	pounds	pounds per sq. foot	0.01602	feet of water @ 32° F
kilograms	1.102 x 10 ⁻³	tons (short)	pounds per sq. foot	4.88243	kg. per sq. meter
kilograms	3.968	British thermal units	pounds per sq. foot	6.944 x 10 ⁻³	pounds per sq. inch
kilogram-calories	3088	foot-pounds	pounds per sq. inch	0.06804	atmospheres
kilogram-calories	1.558 x 10 ⁻³	horse-power-hours	pounds per sq. inch	2.307	feet of water @ 32° F
kilogram-calories	4186	joules	pounds per sq. inch	2.036	inches of mercury @ 32° F
kilogram-calories	426.9	kilogram-meters	pounds per sq. inch	703.1	kg. per sq. meter
kilogram-calories	1.1622 x 10 ⁻³	kilowatt-hours	pounds per sq. inch	144	pounds per sq. foot
kilogram-calories	51.43	foot-pounds per sec.	quarts (liq)	32	fluid ounces
kg.-calories per min.	0.09351	horse-power	quarts (dry)	67.2006	cubic inches
kg.-calories per min.	0.06972	kilowatts	quarts (liq)	57.75	cubic inches
kg.-calories per min.	100000	centimeters	rods	16.5	feet
kilometers	3281	feet	square centimeters	197352.5	circular mils
kilometers	1000	meters	square centimeters	1.076 x 10 ⁻³	square feet
kilometers	0.6214	miles	square centimeters	0.1550	square inches
kilometers	1093.6	yards	square centimeters	0.0001	square meters
kilometers	56.825	B.t. units per min.	square centimeters	100	square millimeters
kilowatts	4.425 x 10 ⁴	foot-pounds per min.	square centimeters	2.2957 x 10 ⁻⁵	acres
kilowatts	737.6	foot-pounds per sec.	square feet	929.03	square centimeters
kilowatts	1.341	horse-power	square feet	144	square inches
kilowatts	14.34	kg.-calories per min.	square feet	0.09290	square meters
kilowatts	997.835	watts	square feet	3.587 x 10 ⁻⁸	square miles
kilowatts	3409.5	British thermal units	square feet	0.1296	square varas
kilowatt-hours	2.655 x 10 ⁶	foot-pounds	square feet	0.1111	square yards
kilowatt-hours	1.341	horse-power-hours	square feet	1273239	circular mils
kilowatt-hours	3.6 x 10 ⁶	joules	square inches	6.452	square centimeters
kilowatt-hours	859.85	kilogram-calories	square inches	6.944 x 10 ⁻³	square feet
kilowatt-hours	367098	kilogram-meters	square inches	1 x 10 ⁶	square mils
kilowatt-hours	2.303	log N or ln N	square inches	645.2	square millimeters
log ¹⁰ N	0.4343	log ¹⁰ N	square miles	640	acres
log ⁶ N or ln N	100	centimeters	square miles	2.78784 x 10 ⁷	square feet
meters	3.2808	feet	square miles	2.590	square kilometers
meters	39.37	inches	square miles	3613040.45	square varas
meters	0.001	kilometers	square miles	3.098 x 10 ⁶	square yards
meters	1000	millimeters	square yards	2.066 x 10 ⁻⁴	acres
meters	1.0936	yards	square yards	9	square feet
meters	160934	centimeters	square yards	0.8361	square meters
miles	5280	feet	square yards	3.228 x 10 ⁻⁷	square miles
miles	1.609344	kilometers	square yards	1.1664	square varas
miles	1760	yards	temp. (degs. C) C+17.8	1.8	temp.(degs. F) C°x 9/5+32
miles	1900.797	varas (Texas)	temp. (degs F) - 32	5/9	temp. (degs. C) F°x 32/9x5
miles	44.70	centimeters per sec.	tons (long)	2240	pounds ardp
miles per hour	88	feet per minute	tons (short)	2000	pounds ardp meters
miles per hour	1.4667	feet per second	yards	0.9144	meters

Conversion Factors

Length

1 inch = 0.0833 ft = 2.54 cm
1 foot = 0.333 yd = 0.3048 m
1 mile = 5280 ft = 1.609 km
1 meter = 39.37 in = 3.281 ft

Temperature

$$C^{\circ} = \frac{(F^{\circ} - 32) \times 5}{9}$$
$$F^{\circ} = \frac{(C^{\circ} - 9) \times 32}{5}$$

Area

Pi = 3.14159
Circular inch = 0.7854 sq in
Square inch = 6.452 sq cm
Square foot = 144 sq in = 0.11 sq. yd
Square yard = 9 sq ft = 0.8361 sq in
Square mile = 640 acres = 2.590 sq km

Volume

Cubic inch = 16.39 milliliters
Cubic foot = 1728 cu in = 7.481 gallons
Cubic yard = 27 cu ft = 7.646 cu meters
US gallon = 128 fluid ounce
US fluid ounce = 29.57 milliliters
Imperial gallon = 1.20 US gallons
Imperial fluid ounce = 0.961 US fluid ounce

Specific Weight

1 pound of water = 27.6 cu in = 0.1198 gallons
1 cubic ft of water = 62.43 pounds
1 gallon water = 8.345 pounds

How To Measure Roof Surfaces

FLAT ROOF

See Figure 1. Multiply length (A) by width (B)
Example: Length 100 feet, width 50 feet.
 $100 \times 50 = 5000$ square feet or 50 squares of roof surface.

GABLE ROOF

See Figure 2. Multiply length (A) by width (B) and add 1/4 of the total.
Example: Length 100 feet, width 50 feet
 $100 \times 50 = 5,000$; $1/4$ of 5,000 = 1,250 ; $5,000 + 1,250 = 6,250$ sq. feet or about 63 squares of roof surface

ARCH ROOF

See Figure 3. Multiply length (A) by width (B) and add 1/2 of the total.
Example: Length 100 feet, width 50 feet
 $100 \times 50 = 5,000 = 2,500$; $5,000 + 2,500 = 7,500$ square feet or 75 squares of roof surface.

Figure 1

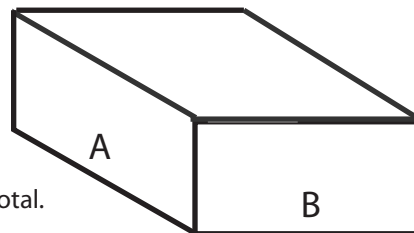


Figure 2

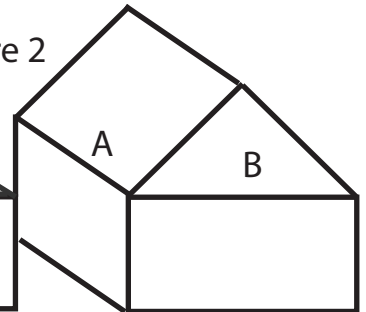
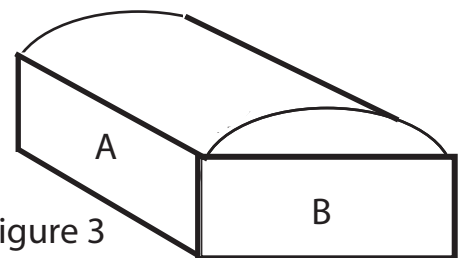


Figure 3



How To Measure a Tank

To compute the area of a tank, multiply height (B) by diameter (A) and multiply the total by 3.

Example: Diameter 20 feet, height 50 feet
 $20 \times 50 = 1,000 \times 3 = 3,000$ square feet

Often times, we are asked to calculate the amount paint required to cover a tank of given dimensions. This is a simple system of figuring the number of square feet in the surface of a tank from which you can easily calculate the number of gallons of paint required. Divide the square feet of surface by the covering capacity.

- 1.) To find the area of the top of the tank - multiply the square of the diameter by 0.7854
- 2.) To find the circumference of the tank - multiply the diameter by 3.1416
- 3.) To find the area of the walls of the tank - multiply height by the circumference.

