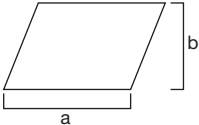
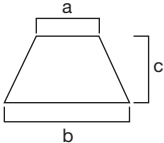
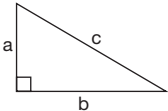
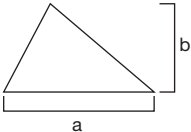
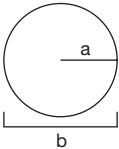
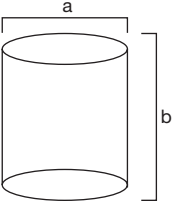
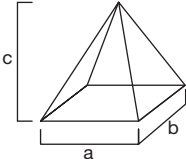
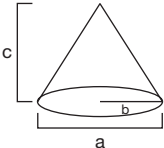
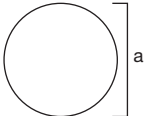


## MATH FORMULAS AND TABLES

### Areas of Common Geometric Shapes

Shape	Formula
	<b>Parallelogram</b> Area = $a \times b$
	<b>Trapezoid</b> Area = $c \times \frac{1}{2} \times (a + b)$
 <p>hypotenuse (c) = <math>\sqrt{(a^2 + b^2)}</math></p>	<b>Right Triangle</b> Area = $\frac{1}{2} \times a \times b$
	<b>Regular Triangle</b> Area = $\frac{1}{2} \times a \times b$
	<b>Circle</b> Area = $3.1416 \times a^2$ Circumference = $3.1416 \times b = 6.2832 \times a$ b (Diameter) = $2 \times a$ (Radius)

**MATH FORMULAS AND TABLES (cont.)****Volumes of Common Geometric Shapes**

<b>Shape</b>	<b>Formula</b>
 <p>A diagram of a cylinder. A horizontal line above the top circular face is labeled 'a', representing the diameter. A vertical line to the right of the cylinder is labeled 'b', representing the height.</p>	<b>Cylinder</b> Volume = $3.1416 \times a/2 \times a/2 \times b$ = $0.7854 \times a^2 \times b$
 <p>A diagram of a rectangular pyramid. The base is a rectangle with length 'a' and width 'b'. A vertical line from the top vertex to the center of the base is labeled 'c', representing the height.</p>	<b>Pyramid</b> Volume = $\frac{1}{3} \times a \times b \times c$
 <p>A diagram of a cone. The base is an ellipse with diameter 'a' and radius 'b'. A vertical line from the top vertex to the center of the base is labeled 'c', representing the height.</p>	<b>Cone</b> Volume = $\frac{1}{3} \times 3.1416 \times b \times b \times c$ = $1.0472 \times b^2 \times c$ Or Volume = $0.3518 \times a^2 \times c$
 <p>A diagram of a sphere. A vertical line to the right of the sphere is labeled 'a', representing the diameter.</p>	<b>Sphere</b> Volume = $\frac{1}{6} \times 3.1416 \times a \times a \times a$ = $0.5236 \times a^3$

**MATH FUNCTIONS FOR NUMBERS 1 TO 100**

<b>Number</b>	<b>Square</b>	<b>Cube</b>	<b>Square Root</b>	<b>Cubic Root</b>
1	1	1	1.0000	1.0000
2	4	8	1.4142	1.2599
3	9	27	1.7321	1.4422
4	16	64	2.0000	1.5874
5	25	125	2.2361	1.7100
6	36	216	2.4495	1.8171
7	49	343	2.6458	1.9129
8	64	512	2.8284	2.0000
9	81	729	3.0000	2.0801
10	100	1000	3.1623	2.1544
11	121	1331	3.3166	2.2240
12	144	1728	3.4641	2.2894
13	169	2197	3.6056	2.3513
14	196	2744	3.7417	2.4101
15	225	3375	3.8730	2.4662
16	256	4096	4.0000	2.5198
17	289	4913	4.1231	2.5713
18	324	5832	4.2426	2.6207
19	361	6859	4.3589	2.6684
20	400	8000	4.4721	2.7144
21	441	9261	4.5826	2.7589
22	484	10648	4.6904	2.8020
23	529	12167	4.7958	2.8439
24	576	13824	4.8990	2.8845
25	625	15625	5.0000	2.9240

**MATH FUNCTIONS FOR NUMBERS 1 TO 100 (cont.)**

<b>Number</b>	<b>Square</b>	<b>Cube</b>	<b>Square Root</b>	<b>Cubic Root</b>
26	676	17576	5.0990	2.9625
27	729	19683	5.1962	3.0000
28	784	21952	5.2915	3.0366
29	841	24389	5.3852	3.0723
30	900	27000	5.4772	3.1072
31	961	29791	5.5678	3.1414
32	1024	32768	5.6569	3.1748
33	1089	35937	5.7446	3.2075
34	1156	39304	5.8310	3.2396
35	1225	42875	5.9161	3.2711
36	1296	46656	6.0000	3.3019
37	1369	50653	6.0828	3.3322
38	1444	54872	6.1644	3.3620
39	1521	59319	6.2450	3.3912
40	1600	64000	6.3246	3.4200
41	1681	68921	6.4031	3.4482
42	1764	74088	6.4807	3.4760
43	1849	79507	6.5574	3.5034
44	1936	85184	6.6332	3.5303
45	2025	91125	6.7082	3.5569
46	2116	97336	6.7823	3.5830
47	2209	103823	6.8557	3.6088
48	2304	110592	6.9282	3.6342
49	2401	117649	7.0000	3.6593
50	2500	125000	7.0711	3.6840

**MATH FUNCTIONS FOR NUMBERS 1 TO 100 (cont.)**

<b>Number</b>	<b>Square</b>	<b>Cube</b>	<b>Square Root</b>	<b>Cubic Root</b>
51	2601	132651	7.1414	3.7084
52	2704	140608	7.2111	3.7325
53	2809	148877	7.2801	3.7563
54	2916	157464	7.3485	3.7798
55	3025	166375	7.4162	3.8030
56	3136	175616	7.4833	3.8259
57	3249	185193	7.5498	3.8485
58	3364	195112	7.6158	3.8709
59	3481	205379	7.6811	3.8930
60	3600	216000	7.7460	3.9149
61	3721	226981	7.8102	3.9365
62	3844	238328	7.8740	3.9579
63	3969	250047	7.9373	3.9791
64	4096	262144	8.0000	4.0000
65	4225	274625	8.0623	4.0207
66	4356	287496	8.1240	4.0412
67	4489	300763	8.1854	4.0615
68	4624	314432	8.2462	4.0817
69	4761	328509	8.3066	4.1016
70	4900	343000	8.3666	4.1213
71	5041	357911	8.4261	4.1408
72	5184	373248	8.4853	4.1602
73	5329	389017	8.5440	4.1793
74	5476	405224	8.6023	4.1983
75	5625	421875	8.6603	4.2172

**MATH FUNCTIONS FOR NUMBERS 1 TO 100 (cont.)**

<b>Number</b>	<b>Square</b>	<b>Cube</b>	<b>Square Root</b>	<b>Cubic Root</b>
76	5776	438976	8.7178	4.2358
77	5929	456533	8.7750	4.2543
78	6084	474552	8.8318	4.2727
79	6241	493039	8.8882	4.2908
80	6400	512000	8.9443	4.3089
81	6561	531441	9.0000	4.3267
82	6724	551368	9.0554	4.3445
83	6889	571787	9.1104	4.3621
84	7056	592704	9.1652	4.3795
85	7225	614125	9.2195	4.3968
86	7396	636056	9.2736	4.4140
87	7569	658503	9.3274	4.4310
88	7744	681472	9.3808	4.4480
89	7921	704969	9.4340	4.4647
90	8100	729000	9.4868	4.4814
91	8281	753571	9.5394	4.4979
92	8464	778688	9.5917	4.5144
93	8649	804357	9.6437	4.5307
94	8836	830584	9.6954	4.5468
95	9025	857375	9.7468	4.5629
96	9216	884736	9.7980	4.5789
97	9409	912673	9.8489	4.5947
98	9604	941192	9.8995	4.6104
99	9801	970299	9.9499	4.6261
100	10000	1000000	10.0000	4.6416

## CONVERTING IMPERIAL MEASURES TO METRIC MEASURES

<i>From</i>	<i>To</i>	<i>Multiply By</i>
<b>Length</b>		
inch (in)	centimeter (cm)	2.54
inch (in)	meter (m)	0.0254
inch (in)	millimeter (mm)	25.4
foot (ft)	centimeter (cm)	30.48
foot (ft)	meter (m)	0.3048
foot (ft)	millimeter (mm)	304.8
yard (yd)	meter (m)	0.9144
<b>Area</b>		
square foot (sq ft)	square meter (sq m)	0.0929
square inch (sq in)	square centimeter (sq cm)	6.4516
square inch (sq in)	square millimeter (sq mm)	645.163
square yard (sq yd)	square meter (sq m)	0.8361
square (sq)	square meter (sq m)	9.2903
acre (ac)	square meter (sq m)	4047
acre (ac)	hectare (ha)	0.4047
<b>Volume</b>		
cubic inch (cu in)	cubic centimeter (cu cm)	16.3872
cubic foot (cu ft)	cubic centimeter (cu cm)	28317
cubic foot (cu ft)	cubic meter (cu m)	0.0283
cubic foot (cu ft)	liter (l)	28.317
cubic yard (cu yd)	cubic meter (cu m)	0.7646
American gallon (gal)	liter (l)	3.7853
<b>Weight/Density</b>		
pound (lb)	kilogram (kg)	0.4536
short ton, 2000 lb	kilogram (kg)	907.1848
Pound per linear foot (lb/ft)	kilogram per meter (kg/m)	1.488
pound per square inch (psi)	kilopascal (kPa)	6.894
pound per square inch (psi)	megapascal (MPa)	0.0069
pound per cubic foot (pcf)	kilogram per cubic meter (kg/m <sup>3</sup> )	16.02

## CONVERTING METRIC MEASURES TO IMPERIAL MEASURES

<i><b>From</b></i>	<i><b>To</b></i>	<i><b>Multiply By</b></i>
<b>Length</b>		
centimeter (cm)	inch (in)	0.3937
millimeter (mm)	foot (ft)	0.0033
millimeter (mm)	inch (in)	0.0394
meter (m)	inch (in)	39.37
meter (m)	foot (ft)	3.2808
meter (m)	yard (yd)	1.0936
<b>Area</b>		
square meter (sq m)	square foot (sq ft)	10.7639
square meter (sq m)	square yard (sq yd)	1.196
square centimeter (sq cm)	square inch (sq in)	0.155
square millimeter (sq mm)	square inch (sq in)	0.0016
hectare (ha)	acre (ac)	2.471
hectare (ha)	square foot (sq ft)	107639
<b>Volume</b>		
cubic centimeter (cu cm)	cubic inch (cu in)	0.061
cubic meter (cu m)	cubic foot (cu ft)	35.3145
cubic meter (cu m)	cubic yard (cu yd)	1.308
cubic meter (cu m)	board foot (bf)	423.783
cubic meter (cu m)	American gallon (gal)	264.2
liter (l)	American gallon (gal)	0.2642
<b>Weight/Density</b>		
kilogram (kg)	pound (lb)	2.2046
Metric ton	short ton, 2000 lb	1.1023
kilogram per meter (kg/m)	Pound per linear foot (lb/ft)	0.672
kilopascal (kPa)	pound per square inch (psi)	0.145
megapascal (MPa)	pound per square inch (psi)	145
kilogram per cubic meter (kg/m <sup>3</sup> )	pound per cubic foot (pcf)	0.0624

## CONVERTING INCHES TO DECIMALS

Inches	Inches in Decimals	Feet In Decimals	Millimeters	Meters
$\frac{1}{16}$	0.0625	0.0052	1.5875	0.0016
$\frac{1}{8}$	0.1250	0.0104	3.1750	0.0032
$\frac{3}{16}$	0.1875	0.0156	4.7625	0.0048
$\frac{1}{4}$	0.2500	0.0208	6.3500	0.0064
$\frac{5}{16}$	0.3125	0.0260	7.9375	0.0079
$\frac{3}{8}$	0.3750	0.0313	9.5250	0.0095
$\frac{7}{16}$	0.4375	0.0365	11.1125	0.0111
$\frac{1}{2}$	0.5000	0.0417	12.7000	0.0127
$\frac{9}{16}$	0.5625	0.0469	14.2875	0.0143
$\frac{5}{8}$	0.6250	0.0521	15.8750	0.0159
$\frac{11}{16}$	0.6875	0.0573	17.4625	0.0175
$\frac{3}{4}$	0.7500	0.0625	19.0500	0.0191
$\frac{13}{16}$	0.8125	0.0677	20.6375	0.0206
$\frac{7}{8}$	0.8750	0.0729	22.2250	0.0222
$\frac{15}{16}$	0.9375	0.0781	23.8125	0.0238
1	1.0000	0.0833	25.4000	0.0254
2	2.0000	0.1667	50.8000	0.0508
3	3.0000	0.2500	76.2000	0.0762
4	4.0000	0.3333	101.6000	0.1016
5	5.0000	0.4167	127.0000	0.1270
6	6.0000	0.5000	152.4000	0.1524
7	7.0000	0.5833	177.8000	0.1778
8	8.0000	0.6667	203.2000	0.2032
9	9.0000	0.7500	228.6000	0.2286
10	10.0000	0.8333	254.0000	0.2540
11	11.0000	0.9167	279.4000	0.2794
12	12.0000	1.0000	304.8000	0.3048