Multiplication Table Chart

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

How to use this multiplication table example

Pick a number from the top row (in bold), let's choose 6.) Pick another number, this time from the left column (also in bold), let's
choose 4.) From 4, move right until you find the box that lines up with the 6 in the top row. That box has 24 in it, this is the answer since 6 x 4 = 24.

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Multiplication Table Practice Sheet

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

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Addition Table

+	0	1	2	3	4	5	6	7	8	9	10
0	0	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10	11
2	2	3	4	5	6	7	8	9	10	11	12
3	3	4	5	6	7	8	9	10	11	12	13
4	4	5	6	7	8	9	10	11	12	13	14
5	5	6	7	8	9	10	11	12	13	14	15
6	6	7	8	9	10	11	12	13	14	15	16
7	7	8	9	10	11	12	13	14	15	16	17
8	8	9	10	11	12	13	14	15	16	17	18
9	9	10	11	12	13	14	15	16	17	18	19
10	10	11	12	13	14	15	16	17	18	19	20

How to use this Addition Table: Pick a number from the top row
(in bold), let's choose 3.) Pick another number, this time from the left
column (also in bold), let's choose 4.) From 4, move right until you find the box that lines up with the 3 in the top row. That box has 7 in

it, this is the answer 3 + 4 = 7.

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2-12 Times Tables

2 x 1 = 2	3 x 1 = 3	4 x 1 = 4	5 x 1 = 5
2 x 2 = 4	3 x 2 = 6	4 x 2 = 8	5 x 2 = 10
2 x 3 = 6	3 x 3 = 9	4 x 3 = 12	5 x 3 = 15
2 x 4 = 8	3 x 4 = 12	4 x 4 = 16	5 x 4 = 20
2 x 5 = 10	3 x 5 = 15	4 x 5 = 20	5 x 5 = 25
2 x 6 = 12	3 x 6 = 18	4 x 6 = 24	5 x 6 = 30
2 x 7 = 14	3 x 7 = 21	4 x 7 = 28	5 x 7 = 35
2 x 8 = 16	3 x 8 = 24	4 x 8 = 32	5 x 8 = 40
2 x 9 = 18	3 x 9 = 27	4 x 9 = 36	5 x 9 = 45
2 x 10 = 20	3 x 10 = 30	4 x 10 = 40	5 x 10 = 50
2 x 11 = 22	3 x 11 = 33	4 x 11 = 44	5 x 11 = 55
2 x 12 = 24	3 x 12 = 36	4 x 12 = 48	5 x 12 = 60

6 x 1 = 6	7 x 1 = 7	8 x 1 = 8	9 x 1 = 9
6 x 2 = 12	7 x 2 = 14	8 x 2 = 16	9 x 2 = 18
6 x 3 = 18	7 x 3 = 21	8 x 3 = 24	9 x 3 = 27
6 x 4 = 24	7 x 4 = 28	8 x 4 = 32	9 x 4 = 36
6 x 5 = 30	7 x 5 = 35	8 x 5 = 40	9 x 5 = 45
6 x 6 = 36	7 x 6 = 42	8 x 6 = 48	9 x 6 = 54
6 x 7 = 42	7 x 7 = 49	8 x 7 = 56	9 x 7 = 63
6 x 8 = 48	7 x 8 = 56	8 x 8 = 64	9 x 8 = 72
6 x 9 = 54	7 x 9 = 63	8 x 9 = 72	9 x 9 = 81
6 x 10 = 60	7 x 10 = 70	8 x 10 = 80	9 x 10 = 90
6 x 11 = 66	7 x 11 = 77	8 x 11 = 88	9 x 11 = 99
6 x 12 = 72	7 x 12 = 84	8 x 12 = 96	9 x 12 = 108

10 x 1 = 10	11 x 1 = 11	12 x 1 = 12
10 x 2 = 20	11 x 2 = 22	12 x 2 = 24
10 x 3 = 30	11 x 3 = 33	12 x 3 = 36
10 x 4 = 40	11 x 4 = 44	12 x 4 = 48
10 x 5 = 50	11 x 5 = 55	12 x 5 = 60
10 x 6 = 60	11 x 6 = 66	12 x 6 = 72
10 x 7 = 70	11 x 7 = 77	12 x 7 = 84
10 x 8 = 80	11 x 8 = 88	12 x 8 = 96
10 x 9 = 90	11 x 9 = 99	12 x 9 = 108
10 x 10 = 100	11 x 10 = 110	12 x 10 = 120
10 x 11 = 110	11 x 11 = 121	12 x 11 = 132
10 x 12 = 120	11 x 12 = 132	12 x 12 = 144

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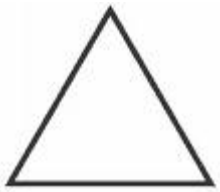
Together, we'll learn

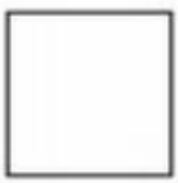
Regular Polygons

Sides and Name
3 Triangle
4 Quadrilateral
5 Pentagon
6 Hexagon
7 Heptagon
8 Octagon
9 Nonagon
10 Decagon
11 Undecagon or Hendecagon
12 Dodecagon
Triskaidecagon
Tetrakaidecagon

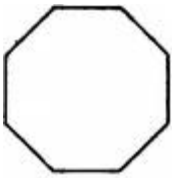


3-Triangle

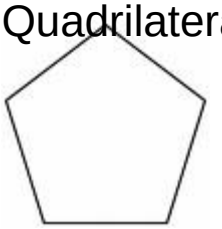
7-Heptagon



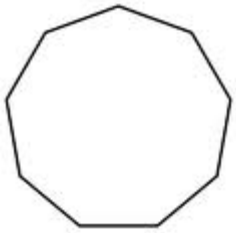
4-Quadrilateral



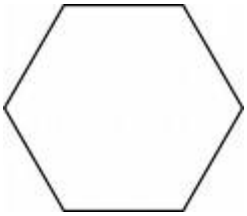
8-Octagon



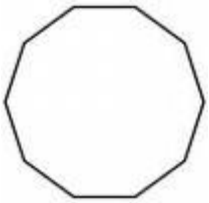
5-Pentagon



9-Nonagon



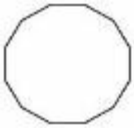
6-Hexagon



10-Decagon

11-Undecagon or Hendecagon

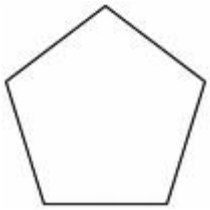
12-Dodecagon



What is a Regular Polygon?

Definition of a Regular Polygon: A polygon in which all
angles and sides are equal.

Example: Regular Polygon



Pentagon

Irregular Polygon? Definition: Any polygon that is not a regular polygon. A polygon whose sides are not all the same length or whose interior angles do
not all have the same measure.

Example: Irregular Polygon

Pentagon 

The figure to the left is pentagon because it has five
sides. But it is irregular because all
the sides are not
equal length.

Fraction	Decimal	Percent
1/2	**0.5**	**50%**
1/3	0.333...	33.333...%
2/3	**0.666...**	**66.666...%**
1/4	0.25	25%
3/4	**0.75**	**75%**
1/5	0.2	20%
2/5	**0.4**	**40%**
3/5	0.6	60%
4/5	**0.8**	**80%**
1/6	0.1666...	16.666...%
5/6	**0.8333...**	**83.333...%**
1/8	0.125	12.5%
3/8	**0.375**	**37.5%**
5/8	0.625	62.5%
7/8	**0.875**	**87.5%**
1/9	0.111...	11.111...%
2/9	**0.222...**	**22.222...%**
4/9	0.444...	44.444...%
5/9	**0.555...**	**55.555...%**
7/9	0.777...	77.777...%
8/9	**0.888...**	**88.888...%**
1/10	0.1	10%
1/12	**0.08333**	**8.333...%**
1/16	0.0625	6.25%
1/32	**0.03125**	**3.125%**

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Math Symbols

+	positive, plus, add		∠	angle
−	negative, minus, subtract		⊥	perpendicular
×	times, multiply		°	degree(s)
÷	divide		Δ	triangle
=	is equal to		≈	is approximately equal to
≠	is not equal to		~	is similar to
<	is less than		∥	is parallel to
>	is greater than		∞	infinity
≤	is less than or equal to		π	pi, 3.14159
≥	is greater than or equal to		≅	is congruent to
( )	Parentheses (grouping symbol)		∴	therefore
[ ]	Brackets (grouping symbol)		√	square root
{ }	Braces (grouping symbol)		⌞	right angle
| |	Absolute Value Bars		!	factorial
∈	is an element of		∑	the sum of
∉	is not an element of		e	numeric constant 2.71828
⊂ ⊆	is a subset of		$\overleftrightarrow{AB}$	line AB
⊄ ⊈	is not a subset		$\overline{AB}$	segment AB
∪	the set of		AB	the length of $\overline{AB}$
∩	the intersection		$\overrightarrow{AB}$	ray AB

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Roman Numerals - 1 to 100

1 = I
2 = II
3 = III
4 = IV
5 = V
6 = VI
7 = VII
8 = VIII
9 = IX
10 = X
11 = XI
12 = XII
13 = XIII
14 = XIV
15 = XV
16 = XVI
17 = XLII
18 = XLIII
19 = XIX
20 = XX
21 = XXI
22 = XXII
23 = XXIII
24 = XXIV
25 = XXV
26 = XXVI
27 = XXVII
28 = XXVIII
29 = XXIX
30 = XXX
31 = XXXI
32 = XXXII
33 = XXXIII
34 = XXXIV
35 = XXXV
36 = XXXVI
37 = XXXVII
38 = XXXVIII
39 = XXXIX
40 = XL
41 = XLI
42 = XLII
43 = XLIII
44 = XLIV
45 = XLV
46 = XLVI
47 = XLVII
48 = XLVIII
49 = XLIX
50 = L
51 = LI
52 = LII
53 = LIII
54 = LIV
55 = LV
56 = LVI
57 = LVII
58 = LVIII
59 = LIX
60 = LX
61 = LXI
62 = LXII
63 = LXIII
64 = LXIV
65 = LXV
66 =LXVI
67 = LXVII
68 = LXVIII
69 = LXIX
70 = LXX
71 = LXXI
72 = LXXII
73 = LXXIII
74 = LXXIV
75 = LXXV
76 = LXXVI
77 = LXXVII
78 = LXXVIII
79 = LXXIX
80 = LXXX
81 = LXXXI
82 = LXXXII
83 = LXXXIII
84 = LXXXIV
85 = LXXXV
86 = LXXXVI
87 = LXXXVII
88 = LXXXVIII
89 = LXXXIX
90 = XC
91 = XCI
92 = XCII
93 = XCIII
94 = XCIV
95 = XCV
96 = XCVI
97 = XCVII
98 = XCVIII
99 = XCIX
100 = C

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Order Of Operations

The order of operations is a special rule in mathematics that tells us what operation we must do first.

Steps:

1: Do operations in Parentheses and other grouping symbols first. If there
are grouping symbols within other grouping symbols do the innermost one
first.
2: Then Exponent
3: Then Multiplication or Division from left to right.
4: And then Addition or Subtraction from left to right

A popular Acronym to Help you Remember the order of operations

(PEMDAS) Please Excuse My Dear Aunt Sally

(Parenthesis), Exponents, Multiply and Divide, Add and Subtract)

Example: Simplify the expression by using the order of operations.

$$(8 + 4 + 3) \div 3 - 2$$

Do the Parentheses first, then do the division,
then add or subtract from left to right.

$$(15) \div 3 - 2$$

$$5 - 2 = 3$$

Answer 3

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Order Of Operations Examples

Simplify each expression by using the order of operations.

1.	18 ÷ 9 + 32	1. 11
2.	6 ÷ 2 +1·4	2. 7
3.	18 - 23 + 3· 4	3. 22
4.	(8 + 4 + 3)÷ 3 - 2	4. 3
5.	(8 + 4 + 5)÷(3 - 2)	5. 17
6.	10 ÷ 5 - 22 ÷ 2	6. 0
7.	40 + 24 ÷ 8 - 3 +1	7. 41
8.	(40 + 24)÷ 8 -(3 +1)	8. 4
9.	(27 +18)÷ 9 -(3 +1)	9. 1

Watch order of operations videos, go to
mathatube.com/order-of-operations.html

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Mean, Median, Mode, and Range

The mean

The mean is the same as the average. Add up the series of numbers
and divide by the number of numbers in the list.

Example: Find the mean of 4, 6, 10, 4.
Step 1: Add all the numbers = 24
Step 2: dividing 24 by the number of numbers in the list. 24÷4=6

the mean or average of 4, 6, 10, 4 is 6

The median

The "median" is the "middle" value in the list of numbers. To find the median,
your numbers have to be listed in numerical order,(from least to greatest) so you may
have to rewrite your list first.
Example : A student has gotten the following grades on his tests: 60, 70, 80, 90, and 100
The median grade is 80

The mode

The "mode" is the value that occurs most often. If no number is repeated,
then there is no mode for the list. Find the mode of 4,6,4 and 10

Example . First you list the numbers in order . 4, 4, 6, 10
Then you look to see which number repeats the most .
4 repeats twice, which means it's the mode is 4.

The Range

The range of a set of data(numbers) is the difference between the highest and lowest values in the set.
Example: find the range of 4, 6, 4, 10

step-1 Arrange the numbers in order by size 4, 4, 6, 10
step-2 Subtract the smallest number from the largest number. 10- 4 = 6

6 is the Range