Math Mini-Office Printables

100's Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Multiplication Chart

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

Abbreviations			
U.S Customary		**Metric**	
Unit	Abbreviation	Unit	Abbreviation
inch	in.	millimeter	mm
foot	ft.	centimeter	cm
yard	yd	meter	m
mile	mi	kilometer	km
miles per hour	mph	gram	g
ounce	oz	kiligram	kg
pound	lb	degree Celsius	°C
ton	T	liter	L
degree Fahrenheit	°F	millileter	mL
pint	pt	Kelvin	K
quart	qt	joule	J
gallon	gal	lumen	lm
cup	c.	mole	mol.
tablespoon	tbsp.	volt	V
teaspoon	tsp.	watt	W
Other Abbreviations			
hour	hr.	square	sq.
minute	min.	dozen	doz.
second	sec.	fluid ounce	fl oz

English vs. Metric Measuring System		
Physical Quantity	*English Unit*	*Metric Unit*
Mass	Pound (lb)	gram (g)
Volume	gallon (gal)	liter (L)
Length	inch (in.)	meter (m)
Time	minute(min)	second (s)
Temperature	Fahrenheit (°F)	Celsius (°C) Kelvin(K)

Time	
60 seconds =	1 minute
60 minutes =	1 hour
24 hours =	1 day
7 days =	1 week
365 days =	1 year
366 days =	1 leap year
10 years =	1 decade
100 years =	1 century

Statistics	
Mean:	the average of a set of numbers
Median:	the middle number of a set of numbers arranged in order
Mode:	the number that appears the most often in a set of numbers
Range:	the difference between the largest and smallest number in a set of numbers

Probability - Chance -Odds	
Probability:	Ratio of favorable/possible
Chance:	Probability expressed as a percent
Odds:	Ratio of favorable:unfavorable

Basic Equivalence Table for Units	
U.S. Customary	**Metric**
Length	
12 in. = 1 ft	10 mm = 1 cm
3 ft = 1 yd	1000 mm 1 m
5280 ft = 1 mi	100 cm 1 m
1760 yd = 1 mi	1000 m 1 km
Weight	**Mass**
16 oz = 1 lb	1000 mg = 1 g
2000 lb = 1 ton	1000 g = 1 kg
Liquid Measure	
16 oz = 1 pt	1000 mL = 1 L
2 pt = 1 qt	
4 qt = 1 gal	

Divisibility Rules	
A number can be divided by:	**if…**
2	its one digit is an even number
3	the sum of the digits is divisible by 3
4	the number formed by the last 2 digits is divisible by 4
5	its ones digit is 0 or 5
6	it is divisible by 2 and 3
9	the sum of its digits is divisible by 9
10	its ones digit is 0

PLACE VALUE CHART

10^{14}	hundred trillions	Whole Numbers Places
10^{13}	ten trillions	
10^{12}	trillions	
,		
10^{11}	hundred billions	
10^{10}	ten billions	
10^{9}	billions	
10^{8}	hundred millions	
10^{7}	ten millions	
10^{6}	millions	
,		
10^{5}	hundred thousands	
10^{4}	ten thousands	
10^{3}	thousands	
,		
10^{2}	hundreds	
10^{1}	tens	
10^{0}	ones	
.	----------	
10^{-1}	tenths	Decimal Places
10^{-2}	hundredths	
10^{-3}	thousandths	
10^{-4}	ten thousandths	
10^{-5}	hundred thousandths	
10^{-6}	millionths	

Equivalence Table for Units	
U.S. Customary	**Metric**
1 gallon = 4 quarts	*liter volume (liquid)*
1 quart = 2 pints	*meter length*
1 pint = 2 cups	*gram mass*
1 pint = 4 gills	1 liter = 1000 milliliters
1 cup = 8 ounces	.001 liters = 1 milliliter
1 ounce = 2 tablespoons	1 cubic centimeter = 1 milliliter
1 tablespoon = 3 teaspoons	10 millimeters = 1 centimeter
12 inches = 1 foot	.1 millimeter = .01 centimeter
3 feet = 1 yard	.1 millimeter = .0001 meter
40 rods = 1 furlong	.001 millimeter = 1 meter
8 furlongs = 1 mile	100 centimeters = 1 meter
1 mile = 5280 feet	.01 meter = 1 centimeter
1 mile = 1760 yards	1000 meters = 1 kilometer
16 ounces = 1 pound	.001 kilometer = 1 meter
2000 pounds = 1 ton	1000 grams 1 kilogram
OTHER	
2.54 cm = 1 in	
1 cm = .3937 in	
1 mi = 1.6093 km	
1 km = .6213 mi	
1 yd = .9144 m	
1 m = 39.3701 in	
14.49 kg = 1 slug (mass)	
3.78 L = 1 g (volume)	

Properties

Properties of Addition and Subtraction

Closure Property of Addition

Sum (or difference) of 2 real numbers equals a real number

Additive Identity

$a + 0 = a$

Additive Inverse

$a + (-a) = 0$

Associative Property of Addition

$(a + b) + c = a + (b + c)$

Commutative Property of Addition

$a + b = b + a$

Additive Property of Equality

If a, b, and c are any real numbers, and if a=b, then
$a + c = b + c$ and also $c + a = c + b$

Additive Property of Inequality

If a, b, and c are any real numbers such that $a > b$
Then $a + c > b + c$ and $c + a > c + b$

Definition of Subtraction
Algebraic Subtraction

$a - b = a + (-b)$
(-b is the opposite of b)

Properties of Multiplication and Division

Closure Property of Multiplication

Product (or quotient if denominator ≠0) of 2 real equals a real number

Multiplicative Identity

$$a \bullet 1 = a$$

Multiplicative Inverse

$$a \bullet \frac{1}{a} = 1 \quad (a \neq 0)$$

Associative Property of Multiplication

$$(a \bullet b) \bullet c = a \bullet (b \bullet c)$$

Commutative Property of Multiplication

$$a \bullet b = b \bullet a$$

Multiplicative Property of Equality

If a, b, and c are real numbers and if a=b,
then ca=cb and also ac=bc

Distributive Property of Multiplication

$$a(b + c) = ab + ac$$

Multiplicative inverse

is the same as the reciprocal of that number.

$$\text{a} = \frac{1}{a} \qquad \text{–a} = -\frac{1}{a}$$

Definition of Division

$$\frac{a}{b} = a\left(\frac{1}{b}\right)$$

Year	Months	Weeks	Days	Hours	Minutes	Seconds
Year	12	52	365	8760	525600	31536000
Leap Year (every 4 years: 2008, 2012, 2016, etc..)	12	52	366	8784	527040	31622400
Months	(Feb) (Feb. Leap) (Apr., June, Sept. Nov) (Jan., Mar., May, July, Aug., Dec.)	4-5	28 29 30 31	672 696 720 744	40320 41760 43200 44640	2419200 2505600 2592000 2678400
Week			7	168	10080	604800
Day				24	1440	86400
Hour					60	3600
Minute						60
SUNDAY	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**
JANUARY	**FEBRUARY**	**MARCH**	**APRIL**	**MAY**	**JUNE**	**JULY**
	AUGUST	**SEPTEMBER**	**OCTOBER**	**NOVEMBER**	**DECEMBER**	

Year	Months	Weeks	Days	Hours	Minutes	Seconds
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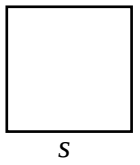
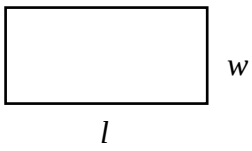
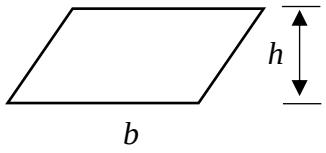
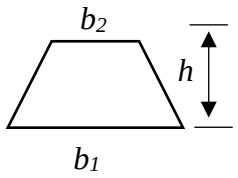
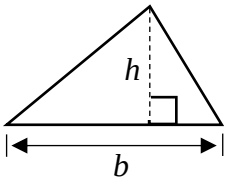
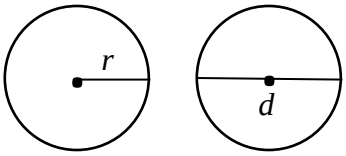
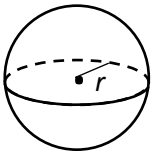
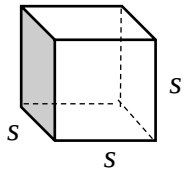
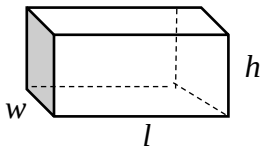
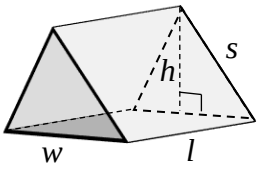
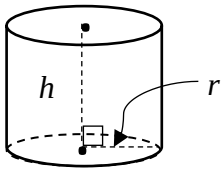
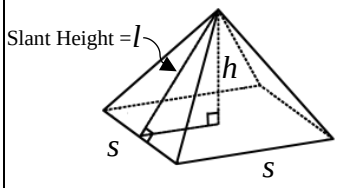
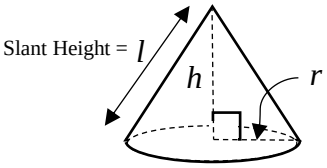
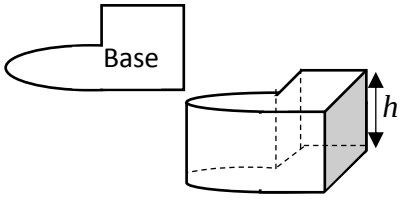
Minute						60
SUNDAY	**MONDAY**	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**	**SATURDAY**
JANUARY	**FEBRUARY**	**MARCH**	**APRIL**	**MAY**	**JUNE**	**JULY**

Geometric Formulas

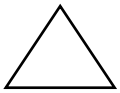
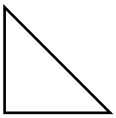
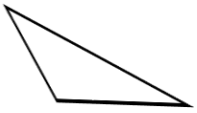
KEY	s = side l = length w = width b = base h = height	r = radius d = diameter π = 3.14 $l.s.a$ = lateral surface area
SQUARE	Perimeter = $4s$ Area = s^2	
RECTANGLE	Perimeter = $2l + 2w$ Area = lw	
PARALLELOGRAM	Area = bh	
TRAPEZOID	Area = $\frac{1}{2}h(b_1 + b_2)$	
TRIANGLE	Area = $\frac{1}{2}bh$	
CIRCLE	Circumference = $2\pi r$ or πd Area = πr^2	
SPHERE	Surface area = $4\pi r^2$ Volume = $\frac{4}{3}\pi r^3$	

Geometric Formulas

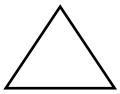
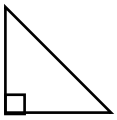
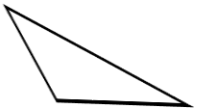
KEY	s = side l = length w = width b = base h = height	r = radius d = diameter π = 3.14 $l.s.a$ = lateral surface area
CUBE	Surface area = $6s^2$ Volume = s^3	
RIGHT RECTANGULAR PRISM	Surface area = $2lw + 2lh + 2wh$ Volume = lwh	
RIGHT TRIANGULAR PRISM	Surface area = $lw + 2ls + wh$ Volume = $\frac{1}{2}whl$	
RIGHT CIRCULAR CYLINDER	Lateral surface area = $2\pi rh$ Surface area = $2\pi r^2 + 2\pi rh$ Volume = $\pi r^2 h$	
REGULAR SQUARE PYRAMID	Lateral surface area = $2sl$ Surface area = $s^2 + 2sl$ Volume = $\frac{1}{3}s^2h$	
RIGHT CIRCULAR CONE	Lateral surface area = πrl Surface area = $\pi r^2 + \pi rl$	
ANY RIGHT SOLID	Lateral surface area ($l.s.a.$) = (perimeter of base) × height Surface area = 2(area of base) + ($l.s.a.$) Volume = (area of base) + height	

Classification of Triangles

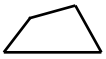
Classification by Sides

Type	Example	Characteristics
Equilateral		Three sides of equal length
Isosceles		At least two side of equal length
Scalene		All three sides are different lengths

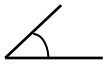
Classification by Angles

Type	Example	Characteristics
Acute		All angles are acute
Right		One angle is right
Obtuse		One angle is obtuse

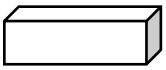
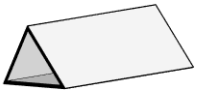
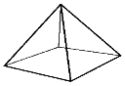
Regular and Irregular Polygons

Name	Regular	Irregular
Triangle		
Quadrilateral		
Pentagon		
Hexagon		
Octogon		

Angles

Right	A 90-degree angle	
Acute	An angle between 0 and 90 degrees	
Obtuse	An angle between 90 and 180 degrees	
Straight	A 180-degree angle	
Reflex	An angle more than 180 but less than 360 degrees	
RIGHT CIRCULAR CONE	Lateral surface area = πrl Surface area = $\pi r^2 + \pi rl$	

Geometric Solids

Type	Example
Cube	
Rectangular Prism	
Triangular Prism	
Pyramid	
Cylinder	
Sphere	
Cone	

To create your *How to Do Math Functions Tab Booklet*, cut out the charts on the next 2 pages along the lines. Stack the charts on top of each other from smallest to largest so that the operation is visible. Create a cover for the top from a scrap piece of colored paper by cutting it the same width as the charts and slightly shorter than the addition tab so that the addition tab will be visible when stacked. Staple the charts together at the top.

addend + addend = sum

addend
+ addend
sum

a + b = c

*To find **a**:*

c – b = a

*To find **b**:*

c – a = b

Addition

minuend - subtrahend = difference

minuend
- subtrahend
difference

(Larger number – smaller number = difference)

a – b = c

*To find **a**:*

b + c = a

*To find **b**:*

c – a = b

Subtraction

multiplicand x multiplier = product

multiplicand
x multiplier
product

a × b = c
or
(a)(b)
or
a • b = c

*To find **a**:*

c ÷ b = a or $b\overline{)c}$ or $\frac{c}{b} = a$

*To find **b**:*

c ÷ a = b or $a\overline{)c}$ or $\frac{c}{a} = b$

Multiplication

$$dividend \div divisor = quotient$$

or

$$divisor\overline{)dividend}^{\,quotient}$$

or

$$\frac{dividend}{divisor} = quotient$$

$a \div b = c$ or $b\overline{)a}^{\,c}$ or $\frac{a}{b} = c$

*To find **a**:*

$$b \times c = a$$

*To find **b**:*

$a \div c = b$ or $c\overline{)a}^{\,b}$ or $\frac{a}{c} = b$

Division

[3{2(1)2}3]

Always work from the inside out.

(1)

{2( )2}

[3{ ( ) }3]

Remember:

P.E.M.D.A.S

Parentheses
Exponents (orders, powers)
Multiplication
Addition
Subtraction

After removing parentheses, braces, and/or brackets,
Work from left to right!

Order of Operations