

# Mathematical Alphanumeric Symbols

**Mathematical Alphanumeric Symbols** is a Unicode block comprising styled forms of Latin and Greek letters and decimal digits that enable mathematicians to denote different notions with different letter styles. The letters in various fonts often have specific, fixed meanings in particular areas of mathematics. By providing uniformity over numerous mathematical articles and books, these conventions help to read mathematical formulas.

Unicode now includes many such symbols (in the range U+1D400–U+1D7FF). The rationale behind this is that it enables design and usage of special mathematical characters (fonts) that include all necessary properties to differentiate from other alphanumerics, e.g. in mathematics an *italic* "A" can have a different meaning from a *roman* letter "A". Unicode originally included a limited set of such letter forms in its [Letterlike Symbols](#) block before completing the set of Latin and Greek letter forms in this block beginning in version 3.1.

Unicode expressly recommends that these characters not be used in general text as a substitute for presentational markup;<sup>[3]</sup> the letters are specifically designed to be semantically different from each other. Unicode does *not* include a set of normal serif letters in the set.<sup>[a]</sup> Still they have found some usage on [social media](#), for example by people who want a stylized user name.<sup>[4]</sup>

All these letter shapes may be manipulated with [MathML](#)'s attribute `mathvariant`.

The introduction date of some of the more commonly used symbols can be found in the [Table of mathematical symbols by introduction date](#).

Mathematical Alphanumeric Symbols	
Range	U+1D400..U+1D7FF (1,024 code points)
Plane	SMP
Scripts	Common
Symbol sets	Mathematical
Assigned	996 code points
Unused	28 reserved code points
Unicode version history	
3.1 (2001)	991 (+991)
4.0 (2003)	992 (+1)
4.1 (2005)	994 (+2)
5.0 (2006)	996 (+2)
Note: <sup>[1]</sup> <sup>[2]</sup>	

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### Chart for the Mathematical Alphanumeric Symbols block

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## Tables of styled letters and digits

These tables show all styled forms of Latin and Greek letters, symbols and digits in the Unicode Standard, with the normal unstyled forms of these characters shown with a cyan background (the basic unstyled letters may be serif or sans-serif depending upon the font). The styled characters are mostly located in the Mathematical Alphanumeric Symbols block, but the 24 characters in cells with a pink background are located in the [letterlike symbols](#) block, for example, ℛ (SCRIPT CAPITAL R) is at U+211B rather than the expected U+1D4AD which is reserved. In the code charts for the Unicode Standard, the reserved code points corresponding to the pink cell are annotated with the name and code point of the correct character.<sup>[5]</sup> There are a few characters which have names that suggest that they should belong in the tables below, but in fact do not because their official character names are misnomers:

- U+2113 ℓ SCRIPT SMALL L is not used as it is a special symbol for [litre](#).<sup>[5]</sup>
- U+2118 ℘ SCRIPT CAPITAL P is in fact the [Weierstrass p](#) which was misnamed, but due to Unicode stability policies the official character name cannot be corrected.<sup>[6]</sup>

### Latin letters

The Unicode values of the characters in the tables below, except those shown with pink backgrounds, dark backgrounds or index values of '–', are obtained by adding the base values from the "U+" header row to the index values in the left column (both values are hexadecimal).

Capital letters														
	Serif				Sans-serif				Script (or calligraphy)		Fraktur		Mono-space	Double-struck
	Normal	Bold	Italic	Bold italic	Normal	Bold	Italic	Bold italic	Normal	Bold	Normal	Bold	Normal	Bold
U+	0041	1D400	1D434	1D468	1D5A0	1D5D4	1D608	1D63C	1D49C	1D4D0	1D504	1D56C	1D670	1D538
00	A	A	A	A	A	A	A	A	ℳ	ℳ	ℒ	ℒ	A	A
01	B	B	B	B	B	B	B	B	℔	℔	℔	℔	B	B
02	C	C	C	C	C	C	C	C	Ⅎ	Ⅎ	Ⅎ	Ⅎ	C	C
03	D	D	D	D	D	D	D	D	™	™	™	™	D	D
04	E	E	E	E	E	E	E	E	Ⅎ	Ⅎ	Ⅎ	Ⅎ	E	E
05	F	F	F	F	F	F	F	F	Ⅎ	Ⅎ	Ⅎ	Ⅎ	F	F
06	G	G	G	G	G	G	G	G	Ⅎ	Ⅎ	Ⅎ	Ⅎ	G	G

07	H	<b>H</b>	<i>H</i>	<b><i>H</i></b>	H	<b>H</b>	<i>H</i>	<b><i>H</i></b>	<i>ℋ</i>	<b>ℋ</b>	ℋ	<i>ℋ</i>	H	H
08	I	<b>I</b>	<i>I</i>	<b><i>I</i></b>	I	<b>I</b>	<i>I</i>	<b><i>I</i></b>	<i>ℐ</i>	<b>ℐ</b>	ℐ	<i>ℐ</i>	I	ℑ
09	J	<b>J</b>	<i>J</i>	<b><i>J</i></b>	J	<b>J</b>	<i>J</i>	<b><i>J</i></b>	<i>ℐ</i>	<b>ℐ</b>	ℐ	<i>ℐ</i>	J	ℑ
0A	K	<b>K</b>	<i>K</i>	<b><i>K</i></b>	K	<b>K</b>	<i>K</i>	<b><i>K</i></b>	<i>℔</i>	<b>℔</b>	℔	<i>℔</i>	K	℔
0B	L	<b>L</b>	<i>L</i>	<b><i>L</i></b>	L	<b>L</b>	<i>L</i>	<b><i>L</i></b>	<i>ℒ</i>	<b>ℒ</b>	ℒ	<i>ℒ</i>	L	ℓ
0C	M	<b>M</b>	<i>M</i>	<b><i>M</i></b>	M	<b>M</b>	<i>M</i>	<b><i>M</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	M	ℓ
0D	N	<b>N</b>	<i>N</i>	<b><i>N</i></b>	N	<b>N</b>	<i>N</i>	<b><i>N</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	N	ℓ
0E	O	<b>O</b>	<i>O</i>	<b><i>O</i></b>	O	<b>O</b>	<i>O</i>	<b><i>O</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	O	ℓ
0F	P	<b>P</b>	<i>P</i>	<b><i>P</i></b>	P	<b>P</b>	<i>P</i>	<b><i>P</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	P	ℓ
10	Q	<b>Q</b>	<i>Q</i>	<b><i>Q</i></b>	Q	<b>Q</b>	<i>Q</i>	<b><i>Q</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	Q	ℓ
11	R	<b>R</b>	<i>R</i>	<b><i>R</i></b>	R	<b>R</b>	<i>R</i>	<b><i>R</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	R	ℓ
12	S	<b>S</b>	<i>S</i>	<b><i>S</i></b>	S	<b>S</b>	<i>S</i>	<b><i>S</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	S	ℓ
13	T	<b>T</b>	<i>T</i>	<b><i>T</i></b>	T	<b>T</b>	<i>T</i>	<b><i>T</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	T	ℓ
14	U	<b>U</b>	<i>U</i>	<b><i>U</i></b>	U	<b>U</b>	<i>U</i>	<b><i>U</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	U	ℓ
15	V	<b>V</b>	<i>V</i>	<b><i>V</i></b>	V	<b>V</b>	<i>V</i>	<b><i>V</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	V	ℓ
16	W	<b>W</b>	<i>W</i>	<b><i>W</i></b>	W	<b>W</b>	<i>W</i>	<b><i>W</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	W	ℓ
17	X	<b>X</b>	<i>X</i>	<b><i>X</i></b>	X	<b>X</b>	<i>X</i>	<b><i>X</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	X	ℓ
18	Y	<b>Y</b>	<i>Y</i>	<b><i>Y</i></b>	Y	<b>Y</b>	<i>Y</i>	<b><i>Y</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	Y	ℓ
19	Z	<b>Z</b>	<i>Z</i>	<b><i>Z</i></b>	Z	<b>Z</b>	<i>Z</i>	<b><i>Z</i></b>	<i>ℓ</i>	<b>ℓ</b>	ℓ	<i>ℓ</i>	Z	ℓ

Small letters

	Serif				Sans-serif				Script (or calligraphy)		Fraktur		Mono-space	Double-struck
	Normal	Bold	Italic	Bold italic	Normal	Bold	Italic	Bold italic	Normal	Bold	Normal	Bold	Normal	Bold
U+	0061	1D41A	1D44E	1D482	1D5BA	1D5EE	1D622	1D656	1D4B6	1D4EA	1D51E	1D586	1D68A	1D552
00	a	<b>a</b>	<i>a</i>	<b><i>a</i></b>	a	<b>a</b>	<i>a</i>	<b><i>a</i></b>	<i>a</i>	<b>a</b>	a	<b>a</b>	a	𝔞
01	b	<b>b</b>	<i>b</i>	<b><i>b</i></b>	b	<b>b</b>	<i>b</i>	<b><i>b</i></b>	<i>b</i>	<b>b</b>	b	<b>b</b>	b	𝔞
02	c	<b>c</b>	<i>c</i>	<b><i>c</i></b>	c	<b>c</b>	<i>c</i>	<b><i>c</i></b>	<i>c</i>	<b>c</b>	c	<b>c</b>	c	𝔞
03	d	<b>d</b>	<i>d</i>	<b><i>d</i></b>	d	<b>d</b>	<i>d</i>	<b><i>d</i></b>	<i>d</i>	<b>d</b>	d	<b>d</b>	d	𝔞
04	e	<b>e</b>	<i>e</i>	<b><i>e</i></b>	e	<b>e</b>	<i>e</i>	<b><i>e</i></b>	<i>e</i>	<b>e</b>	e	<b>e</b>	e	𝔞
05	f	<b>f</b>	<i>f</i>	<b><i>f</i></b>	f	<b>f</b>	<i>f</i>	<b><i>f</i></b>	<i>f</i>	<b>f</b>	f	<b>f</b>	f	𝔞
06	g	<b>g</b>	<i>g</i>	<b><i>g</i></b>	g	<b>g</b>	<i>g</i>	<b><i>g</i></b>	<i>g</i>	<b>g</b>	g	<b>g</b>	g	𝔞
07	h	<b>h</b>	<i>h</i>	<b><i>h</i></b>	h	<b>h</b>	<i>h</i>	<b><i>h</i></b>	<i>h</i>	<b>h</b>	h	<b>h</b>	h	𝔞
08	i	<b>i</b>	<i>i</i>	<b><i>i</i></b>	i	<b>i</b>	<i>i</i>	<b><i>i</i></b>	<i>i</i>	<b>i</b>	i	<b>i</b>	i	𝔞
09	j	<b>j</b>	<i>j</i>	<b><i>j</i></b>	j	<b>j</b>	<i>j</i>	<b><i>j</i></b>	<i>j</i>	<b>j</b>	j	<b>j</b>	j	𝔞
0A	k	<b>k</b>	<i>k</i>	<b><i>k</i></b>	k	<b>k</b>	<i>k</i>	<b><i>k</i></b>	<i>k</i>	<b>k</b>	k	<b>k</b>	k	𝔞
0B	l	<b>l</b>	<i>l</i>	<b><i>l</i></b>	l	<b>l</b>	<i>l</i>	<b><i>l</i></b>	<i>l</i>	<b>l</b>	l	<b>l</b>	l	𝔞
0C	m	<b>m</b>	<i>m</i>	<b><i>m</i></b>	m	<b>m</b>	<i>m</i>	<b><i>m</i></b>	<i>m</i>	<b>m</b>	m	<b>m</b>	m	𝔞
0D	n	<b>n</b>	<i>n</i>	<b><i>n</i></b>	n	<b>n</b>	<i>n</i>	<b><i>n</i></b>	<i>n</i>	<b>n</b>	n	<b>n</b>	n	𝔞
0E	o	<b>o</b>	<i>o</i>	<b><i>o</i></b>	o	<b>o</b>	<i>o</i>	<b><i>o</i></b>	<i>o</i>	<b>o</b>	o	<b>o</b>	o	𝔞
0F	p	<b>p</b>	<i>p</i>	<b><i>p</i></b>	p	<b>p</b>	<i>p</i>	<b><i>p</i></b>	<i>p</i>	<b>p</b>	p	<b>p</b>	p	𝔞
10	q	<b>q</b>	<i>q</i>	<b><i>q</i></b>	q	<b>q</b>	<i>q</i>	<b><i>q</i></b>	<i>q</i>	<b>q</b>	q	<b>q</b>	q	𝔞
11	r	<b>r</b>	<i>r</i>	<b><i>r</i></b>	r	<b>r</b>	<i>r</i>	<b><i>r</i></b>	<i>r</i>	<b>r</b>	r	<b>r</b>	r	𝔞
12	s	<b>s</b>	<i>s</i>	<b><i>s</i></b>	s	<b>s</b>	<i>s</i>	<b><i>s</i></b>	<i>s</i>	<b>s</b>	s	<b>s</b>	s	𝔞
13	t	<b>t</b>	<i>t</i>	<b><i>t</i></b>	t	<b>t</b>	<i>t</i>	<b><i>t</i></b>	<i>t</i>	<b>t</b>	t	<b>t</b>	t	𝔞
14	u	<b>u</b>	<i>u</i>	<b><i>u</i></b>	u	<b>u</b>	<i>u</i>	<b><i>u</i></b>	<i>u</i>	<b>u</b>	u	<b>u</b>	u	𝔞
15	v	<b>v</b>	<i>v</i>	<b><i>v</i></b>	v	<b>v</b>	<i>v</i>	<b><i>v</i></b>	<i>v</i>	<b>v</b>	v	<b>v</b>	v	𝔞

16	W	W	W	W	W	W	W	W	W	W	W	W	W	W
17	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
19	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
—	1	N/A	l	N/A										
—	J	N/A	J	N/A										

Greek letters and symbols

The Unicode values of the characters in the tables below, except those shown with yellow backgrounds or index values of '-', are obtained by adding the base values from the "U+" header row to the index values in the left column (both values are hexadecimal).

Capital letters

	Normal	Bold	Italic	Bold italic	Sans-serif bold	Sans-serif bold italic
U+	0391	1D6A8	1D6E2	1D71C	1D756	1D790
00	A	A	A	A	A	A
01	B	B	B	B	B	B
02	Γ	Γ	Γ	Γ	Γ	Γ
03	Δ	Δ	Δ	Δ	Δ	Δ
04	E	E	E	E	E	E
05	Z	Z	Z	Z	Z	Z
06	H	H	H	H	H	H
07	Θ	Θ	Θ	Θ	Θ	Θ
08	I	I	I	I	I	I
09	K	K	K	K	K	K
0A	Λ	Λ	Λ	Λ	Λ	Λ
0B	M	M	M	M	M	M
0C	N	N	N	N	N	N
0D	Ξ	Ξ	Ξ	Ξ	Ξ	Ξ
0E	O	O	O	O	O	O
0F	Π	Π	Π	Π	Π	Π
10	P	P	P	P	P	P
11	Θ	Θ	Θ	Θ	Θ	Θ
12	Σ	Σ	Σ	Σ	Σ	Σ
13	T	T	T	T	T	T
14	Υ	Υ	Υ	Υ	Υ	Υ
15	Φ	Φ	Φ	Φ	Φ	Φ
16	X	X	X	X	X	X
17	Ψ	Ψ	Ψ	Ψ	Ψ	Ψ
18	Ω	Ω	Ω	Ω	Ω	Ω
19	∇	∇	∇	∇	∇	∇

Small letters

	Normal	Bold	Italic	Bold italic	Sans-serif bold	Sans-serif bold italic
U+	03B1	1D6C2	1D6FC	1D736	1D770	1D7AA
00	α	α	α	α	α	α
01	β	β	β	β	β	β
02						

	γ	Υ	γ	Υ	Υ	Υ
03	δ	Δ	δ	Δ	Δ	Δ
04	ε	Ε	ε	Ε	Ε	Ε
05	ζ	Ζ	ζ	Ζ	Ζ	Ζ
06	η	Η	η	Η	Η	Η
07	θ	Θ	θ	Θ	Θ	Θ
08	ι	Ι	ι	Ι	Ι	Ι
09	κ	Κ	κ	Κ	Κ	Κ
0A	λ	Λ	λ	Λ	Λ	Λ
0B	μ	Μ	μ	Μ	Μ	Μ
0C	ν	Ν	ν	Ν	Ν	Ν
0D	ξ	Ξ	ξ	Ξ	Ξ	Ξ
0E	ο	Ο	ο	Ο	Ο	Ο
0F	π	Π	π	Π	Π	Π
10	ρ	Ρ	ρ	Ρ	Ρ	Ρ
11	ς	Σ	ς	Σ	Σ	Σ
12	σ	Σ	σ	Σ	Σ	Σ
13	τ	Τ	τ	Τ	Τ	Τ
14	υ	Υ	υ	Υ	Υ	Υ
15	φ	Φ	φ	Φ	Φ	Φ
16	χ	Χ	χ	Χ	Χ	Χ
17	ψ	Ψ	ψ	Ψ	Ψ	Ψ
18	ω	Ω	ω	Ω	Ω	Ω
19	∂	∂	∂	∂	∂	∂
1A	€	€	€	€	€	€
1B	ƒ	ƒ	ƒ	ƒ	ƒ	ƒ
1C	℥	℥	℥	℥	℥	℥
1D	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
1E	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ
1F	℔	℔	℔	℔	℔	℔
—	F	F				
—	F	f				

Digits

The Unicode values of the characters in the tables below are obtained by adding the hexadecimal base values from the "U+" header row to the index values in the left column.

	Normal	Bold	Double- struck	Sans- serif	Sans- serif bold	Mono- space
U+	0030	1D7CE	1D7D8	1D7E2	1D7EC	1D7F6
0	0	<b>0</b>	<b>0</b>	0	<b>0</b>	0
1	1	<b>1</b>	<b>1</b>	1	<b>1</b>	1
2	2	<b>2</b>	<b>2</b>	2	<b>2</b>	2
3	3	<b>3</b>	<b>3</b>	3	<b>3</b>	3
4	4	<b>4</b>	<b>4</b>	4	<b>4</b>	4
5	5	<b>5</b>	<b>5</b>	5	<b>5</b>	5
6	6	<b>6</b>	<b>6</b>	6	<b>6</b>	6
7	7	<b>7</b>	<b>7</b>	7	<b>7</b>	7

8	8	8	8	8	8	8
9	9	9	9	9	9	9

Glyph variants

Variation selectors may be used to specify chancery (U+FE00) vs roundhand (U+FE01) forms, if the font supports them:

	Plain	FE00	FE01
U+1D49C	<i>ℒ</i>	<i>ℒ</i>	<i>ℒ</i>
U+1D49E	<i>ℭ</i>	<i>ℭ</i>	<i>ℭ</i>
U+1D49F	<i>ℰ</i>	<i>ℰ</i>	<i>ℰ</i>
U+1D4A2	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4A5	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4A6	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4A9	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4AA	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4AB	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4AC	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4AE	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4AF	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B0	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B1	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B2	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B3	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B4	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4B5	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>

The remainder of the set is at Letterlike Symbols.

Chart for the Mathematical Alphanumeric Symbols block

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Mathematical Alphanumeric Symbols <sup>[1][2]</sup>																
Official Unicode Consortium code chart (https://www.unicode.org/charts/PDF/U1D400.pdf) (PDF)																
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+1D40x	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>O</b>	<b>P</b>
U+1D41x	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>e</b>	<b>f</b>
U+1D42x	<b>g</b>	<b>h</b>	<b>i</b>	<b>j</b>	<b>k</b>	<b>l</b>	<b>m</b>	<b>n</b>	<b>o</b>	<b>p</b>	<b>q</b>	<b>r</b>	<b>s</b>	<b>t</b>	<b>u</b>	<b>v</b>
U+1D43x	<b>w</b>	<b>x</b>	<b>y</b>	<b>z</b>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>
U+1D44x	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>
U+1D45x	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>		<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>
U+1D46x	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
U+1D47x	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>
U+1D48x	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
U+1D49x	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>ℳ</i>		<i>ℒ</i>	<i>℔</i>
U+1D4Ax			<i>ℱ</i>			<i>ℱ</i>	<i>ℱ</i>			<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>
U+1D4Bx	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4Cx	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4Dx	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4Ex	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D4Fx	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D50x	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>			<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>
U+1D51x	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>	<i>ℱ</i>		<i>ℱ</i>	<i>ℱ</i>
U+1D52x	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>
U+1D53x	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>A</i>	<i>B</i>		<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	
U+1D54x	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>		<i>O</i>				<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>
U+1D55x	<i>Y</i>		<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
U+1D56x	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>ℳ</i>	<i>ℒ</i>	<i>℔</i>	<i>℔</i>
U+1D57x	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>
U+1D58x	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>
U+1D59x	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>	<i>℔</i>
U+1D5Ax	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>
U+1D5Bx	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
U+1D5Cx	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>
U+1D5Dx	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>
U+1D5Ex	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>
U+1D5Fx	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>
U+1D60x	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
U+1D61x	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>
U+1D62x	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
U+1D63x	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
U+1D64x	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>
U+1D65x	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
U+1D66x	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>
U+1D67x	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>

U+1D68x	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d	e	f
U+1D69x	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
U+1D6Ax	w	x	y	z	ι	ϳ			Α	Β	Γ	Δ	Ε	Ζ	Η	Θ
U+1D6Bx	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	Π	Ρ	Θ	Σ	Τ	Υ	Φ	Χ	Ψ
U+1D6Cx	Ω	∇	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ
U+1D6Dx	ο	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ϑ	ε	ϑ	κ	φ
U+1D6Ex	ϙ	Ϙ	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ
U+1D6Fx	Ο	Π	Ρ	Θ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	∇	α	β	γ	δ
U+1D70x	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	ς	σ	τ
U+1D71x	υ	φ	χ	ψ	ω	ϑ	ε	ϑ	κ	φ	ϙ	Ϙ	Α	Β	Γ	Δ
U+1D72x	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	Π	Ρ	Θ	Σ	Τ
U+1D73x	Υ	Φ	Χ	Ψ	Ω	∇	α	β	γ	δ	ε	ζ	η	θ	ι	κ
U+1D74x	λ	μ	ν	ξ	ο	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ϑ
U+1D75x	ε	ϑ	κ	φ	ϙ	Ϙ	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ
U+1D76x	Λ	Μ	Ν	Ξ	Ο	Π	Ρ	Θ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	∇
U+1D77x	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π
U+1D78x	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ϑ	ε	ϑ	κ	φ	ϙ	Ϙ
U+1D79x	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	Π
U+1D7Ax	Ρ	Θ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	∇	α	β	γ	δ	ε	ζ
U+1D7Bx	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	ς	σ	τ	υ	φ
U+1D7Cx	χ	ψ	ω	ϑ	ε	ϑ	κ	φ	ϙ	Ϙ	F	f			0	1
U+1D7Dx	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7
U+1D7Ex	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
U+1D7Fx	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
<div>Notes</div> <div>1.^ As of Unicode version 14.0</div> <div>2.^ Grey areas indicate non-assigned code points</div>																

## History

The following Unicode-related documents record the purpose and process of defining specific characters in the Mathematical Alphanumeric Symbols block:

Version	Final code points <sup>[b]</sup>	Count	L2 ID	WG2 ID
3.1	U+1D400..1D454, 1D456..1D49C, 1D49E..1D49F, 1D4A2, 1D4A5..1D4A6, 1D4A9..1D4AC, 1D4AE..1D4B9, 1D4BB, 1D4BD..1D4C0, 1D4C2..1D4C3, 1D4C5..1D505, 1D507..1D50A, 1D50D..1D514, 1D516..1D51C, 1D51E..1D539, 1D53B..1D53E, 1D540..1D544, 1D546, 1D54A..1D550, 1D552..1D6A3, 1D6A8..1D7C9, 1D7CE..1D7FF	991	<a href="https://www.unicode.org/L2/L1998/98405.htm">L2/98-405 (https://www.unicode.org/L2/L1998/98405.htm)</a>	
			<a href="https://www.unicode.org/L2/L1998/98406.htm">L2/98-406 (https://www.unicode.org/L2/L1998/98406.htm)</a>	
			<a href="https://www.unicode.org/L2/L1999/99049.pdf">L2/99-049 (https://www.unicode.org/L2/L1999/99049.pdf)</a>	
			<a href="https://www.unicode.org/L2/L1999/99045.pdf">L2/99-045 (https://www.unicode.org/L2/L1999/99045.pdf)</a>	
			<a href="https://www.unicode.org/L2/L1998/98419.pdf">L2/98-419 (pdf (https://www.unicode.org/L2/L1998/98419.pdf), doc (https://www.unicode.org/L2/L1998/98419.doc))</a>	
			<a href="https://www.unicode.org/L2/L1999/99188.htm">L2/99-188 (https://www.unicode.org/L2/L1999/99188.htm)</a>	
			<a href="https://www.unicode.org/L2/L1999/99176.htm">L2/99-176R (https://www.unicode.org/L2/L1999/99176.htm)</a>	
			<a href="https://www.unicode.org/L2/L1999/mathalph.pdf">L2/99-199 (https://www.unicode.org/L2/L1999/mathalph.pdf)</a>	
			<a href="https://www.unicode.org/L2/L1999/99054r.htm">L2/99-054R (https://www.unicode.org/L2/L1999/99054r.htm)</a>	
			<a href="https://www.unicode.org/L2/L1999/99195.htm">L2/99-195 (https://www.unicode.org/L2/L1999/99195.htm)</a>	<a href="https://www.unicode.org/doc (https://www.unicode.org/wg2/doc">N2086 (html (https://www.unicode.org/doc (https://www.unicode.org/wg2/doc</a>
			<a href="https://www.unicode.org/L2/L2000/00010-n2103.pdf">L2/00-010 (https://www.unicode.org/L2/L2000/00010-n2103.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2103 (https://www.unicode.org/wg2/c</a>
			<a href="https://www.unicode.org/L2/L2000/00002-math.pdf">L2/00-002 (https://www.unicode.org/L2/L2000/00002-math.pdf)</a>	



<a href="https://www.unicode.org/L2/L2000/00005.htm">L2/00-005R2 (https://www.unicode.org/L2/L2000/00005.htm)</a>	
<a href="https://www.unicode.org/L2/L2000/00074-n2168.pdf">L2/00-074 (https://www.unicode.org/L2/L2000/00074-n2168.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2168 (https://www.unicode.org/wg2/c)</a>
<a href="https://www.unicode.org/L2/L2000/00094-n2191.pdf">L2/00-094 (https://www.unicode.org/L2/L2000/00094-n2191.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2191 (https://www.unicode.org/wg2/c)</a>
<a href="https://www.unicode.org/L2/L2000/00119-math.pdf">L2/00-119 (https://www.unicode.org/L2/L2000/00119-math.pdf)</a> <sup>[c]</sup>	<a href="https://www.unicode.org/wg2/c">N2191R (https://www.unicode.org/wg2/c)</a>
<a href="https://www.unicode.org/L2/L2000/00239-Mathematical%20Letter%20Symbols.txt">L2/00-239 (https://www.unicode.org/L2/L2000/00239-Mathematical%20Letter%20Symbols.txt)</a>	
<a href="https://www.unicode.org/L2/L2000/00240-Mathematical%20Letter%20Symbols.txt">L2/00-240 (https://www.unicode.org/L2/L2000/00240-Mathematical%20Letter%20Symbols.txt)</a>	
<a href="https://www.unicode.org/L2/L2000/00234-n2203m.pdf">L2/00-234 (https://www.unicode.org/L2/L2000/00234-n2203m.pdf)</a>	<a href="https://www.unicode.org/wg2/docs/n2203.rtf">N2203 (rtf (https://www.unicode.org/wg2/docs/n2203.rtf (https://www.unicode.org/wg2/docs/n2203.rtf))</a>
<a href="https://www.unicode.org/L2/L2000/00249-kent-math.htm">L2/00-249 (https://www.unicode.org/L2/L2000/00249-kent-math.htm)</a>	
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<a href="https://www.unicode.org/L2/L2000/00280-MathML-challenge.txt">L2/00-280 (https://www.unicode.org/L2/L2000/00280-MathML-challenge.txt)</a>	
<a href="https://www.unicode.org/L2/L2000/00187.htm">L2/00-187 (https://www.unicode.org/L2/L2000/00187.htm)</a>	
<a href="https://www.unicode.org/L2/L2000/00336-n2272.pdf">L2/00-336 (https://www.unicode.org/L2/L2000/00336-n2272.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2272 (https://www.unicode.org/wg2/c)</a>
<a href="https://www.unicode.org/L2/L2001/01050-n2353.pdf">L2/01-050 (https://www.unicode.org/L2/L2001/01050-n2353.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2253 (https://www.unicode.org/wg2/c)</a>

			<a href="https://www.unicode.org/L2/L2002/02366-nt-letterlike.pdf">L2/02-366 (https://www.unicode.org/L2/L2002/02366-nt-letterlike.pdf)</a>	
			<a href="https://www.unicode.org/L2/L2002/02345.htm">L2/02-345 (https://www.unicode.org/L2/L2002/02345.htm)</a>	
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			<a href="https://www.unicode.org/L2/L2020/20281-math-script-styles.pdf">L2/20-281 (https://www.unicode.org/L2/L2020/20281-math-script-styles.pdf)</a>	
			<a href="https://www.unicode.org/L2/L2021/21016r-script-adhoc-rept.pdf">L2/21-016R (https://www.unicode.org/L2/L2021/21016r-script-adhoc-rept.pdf)</a>	
			<a href="https://www.unicode.org/L2/L2021/21009.htm">L2/21-009 (https://www.unicode.org/L2/L2021/21009.htm)</a>	
4.0	U+1D4C1	1		<a href="https://www.unicode.org/wg2/c">N2449 (https://www.unicode.org/wg2/c)</a>
			<a href="https://www.unicode.org/L2/L2002/02372-n2453-minutes.pdf">L2/02-372 (https://www.unicode.org/L2/L2002/02372-n2453-minutes.pdf)</a>	<a href="https://www.unicode.org/v">N2453 (pdf (https://www.unicode.org/v</a> <a href="https://www.unicode.org/wg2/doc">doc (https://www.unicode.org/wg2/doc</a>
4.1	U+1D6A4..1D6A5	2	<a href="https://www.unicode.org/L2/L2003/03194-math-letterlike.pdf">L2/03-194 (https://www.unicode.org/L2/L2003/03194-math-letterlike.pdf)</a>	<a href="https://www.unicode.org/wg2/c">N2590 (https://www.unicode.org/wg2/c)</a>
5.0	U+1D7CA..1D7CB	2	<a href="https://www.unicode.org/L2/L2004/04406-math.pdf">L2/04-406 (https://www.unicode.org/L2/L2004/04406-math.pdf)</a>	
			<a href="https://www.unicode.org/L2/L2004/04410-math.pdf">L2/04-410 (https://www.unicode.org/L2/L2004/04410-math.pdf)</a>	

- a. Unicode thus assumes a given font is a serif by default; a sans-serif font that supports the range would thus display the standard letters and the "sans-serif" symbols identically I the same.
- b. Proposed code points and characters names may differ from final code points and names
- c. Refer to the [history section](#) of the Miscellaneous Mathematical Symbols-B block for additional math-related documents

See also

- [Typographical conventions in mathematical formulae](#)

- [Greek letters used in mathematics, science, and engineering](#)
- [Latin letters used in mathematics](#)
- [Mathematical operators and symbols in Unicode](#)
- [OpenType fonts feature \*mgrk\*](#)

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