

## Character sets

# Differences between ANSI, ISO-8859-1 and MacRoman character sets

ANSI	MACROMAN	DIFFERENCES	WGL4	SYMBOL	WINGDINGS	WINGDINGS 2
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Of the three main 8-bit character sets, only ISO-8859-1 is produced by a standards organization. The three sets are identical for the 95 characters from 32 to 126, the ASCII character set. The [ANSI character set](#), also known as Windows-1252, has become a Microsoft proprietary character set; it is a superset of ISO-8859-1 with the addition of 27 characters in locations that ISO designates for control codes. Apple's proprietary [MacRoman character set](#) contains a similar variety of characters from 128 to 255, but with very few of them assigned the same numbers, and also assigns characters to the control-code positions.

The characters that appear in the first column of the following tables are generated from Unicode numeric character references, and so they should appear correctly in any Web browser that supports [Unicode](#) and that has suitable fonts available, regardless of the operating system.

1. [ANSI characters not present in ISO-8859-1](#)
2. [ANSI characters not present in MacRoman](#)
3. [ISO-8859-1 characters not present in ANSI](#)
4. [ISO-8859-1 characters not present in MacRoman](#)
5. [MacRoman characters not present in ANSI](#)
6. [MacRoman characters not present in ISO-8859-1](#)

## 1. ANSI characters not present in ISO-8859-1

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Character	ANSI Number	Unicode Number	ANSI Hex	Unicode Hex	HTML 4.0 Entity	Unicode Name	Unicode Range
€	128	8364	0x80	U+20AC	&euro;	euro sign	Currency Symbols
,	130	8218	0x82	U+201A	&sbquo;	single low-9 quotation mark	General Punctuation
f	131	402	0x83	U+0192	&fnof;	Latin small letter f with hook	Latin Extended-B
”	132	8222	0x84	U+201E	&bdquo;	double low-9 quotation mark	General Punctuation
...	133	8230	0x85	U+2026	&hellip;	horizontal ellipsis	General Punctuation
†	134	8224	0x86	U+2020	&dagger;	dagger	General Punctuation

‡	135	8225	0x87	U+2021	&Dagger;	double dagger	General Punctuation
^	136	710	0x88	U+02C6	&circ;	modifier letter circumflex accent	Spacing Modifier Letters
‰	137	8240	0x89	U+2030	&permil;	per mille sign	General Punctuation
Š	138	352	0x8A	U+0160	&Scaron;	Latin capital letter S with caron	Latin Extended-A
<	139	8249	0x8B	U+2039	&lsaquo;	single left-pointing angle quotation mark	General Punctuation
Œ	140	338	0x8C	U+0152	&OElig;	Latin capital ligature OE	Latin Extended-A
Ž	142	381	0x8E	U+017D		Latin capital letter Z with caron	Latin Extended-A
‘	145	8216	0x91	U+2018	&lsquo;	left single quotation mark	General Punctuation
’	146	8217	0x92	U+2019	&rsquo;	right single quotation mark	General Punctuation
“	147	8220	0x93	U+201C	&ldquo;	left double quotation mark	General Punctuation
”	148	8221	0x94	U+201D	&rdquo;	right double quotation mark	General Punctuation
•	149	8226	0x95	U+2022	&bull;	bullet	General Punctuation
—	150	8211	0x96	U+2013	&ndash;	en dash	General Punctuation
—	151	8212	0x97	U+2014	&mdash;	em dash	General Punctuation
~	152	732	0x98	U+02DC	&tilde;	small tilde	Spacing Modifier Letters
™	153	8482	0x99	U+2122	&trade;	trade mark sign	Letterlike Symbols
š	154	353	0x9A	U+0161	&scaron;	Latin small letter s with caron	Latin Extended-A
>	155	8250	0x9B	U+203A	&rsaquo;	single right-pointing angle quotation mark	General Punctuation
œ	156	339	0x9C	U+0153	&oelig;	Latin small ligature oe	Latin Extended-A

ž	158	382	0x9E	U+017E		Latin small letter z with caron	Latin Extended-A
ÿ	159	376	0x9F	U+0178	&Yuml;	Latin capital letter Y with diaeresis	Latin Extended-A

## 2. ANSI characters not present in MacRoman

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Character	ANSI Number	Unicode Number	ANSI Hex	Unicode Hex	HTML 4.0 Entity	Unicode Name	Unicode Range
Š	138	352	0x8A	U+0160	&Scaron;	Latin capital letter S with caron	Latin Extended-A
Ž	142	381	0x8E	U+017D		Latin capital letter Z with caron	Latin Extended-A
š	154	353	0x9A	U+0161	&scaron;	Latin small letter s with caron	Latin Extended-A
ž	158	382	0x9E	U+017E		Latin small letter z with caron	Latin Extended-A
¤	164	164	0xA4	U+00A4	&curren;	currency sign	Latin-1 Supplement
ı	166	166	0xA6	U+00A6	&brvbar;	broken bar	Latin-1 Supplement
	173	173	0xAD	U+00AD	&shy;	soft hyphen	Latin-1 Supplement
²	178	178	0xB2	U+00B2	&sup2;	superscript two	Latin-1 Supplement
³	179	179	0xB3	U+00B3	&sup3;	superscript three	Latin-1 Supplement
¹	185	185	0xB9	U+00B9	&sup1;	superscript one	Latin-1 Supplement
¼	188	188	0xBC	U+00BC	&frac14;	vulgar fraction one quarter	Latin-1 Supplement
½	189	189	0xBD	U+00BD	&frac12;	vulgar fraction one half	Latin-1 Supplement
¾	190	190	0xBE	U+00BE	&frac34;	vulgar fraction three quarters	Latin-1 Supplement
Ð	208	208	0xD0	U+00D0	&ETH;	Latin capital letter Eth	Latin-1 Supplement
	215	215	0xD7	U+00D7	&times;	multiplication sign	Latin-1

×							Supplement
Ý	221	221	0xDD	U+00DD	&Yacute;	Latin capital letter Y with acute	Latin-1 Supplement
Þ	222	222	0xDE	U+00DE	&THORN;	Latin capital letter Thorn	Latin-1 Supplement
ð	240	240	0xF0	U+00F0	&eth;	Latin small letter eth	Latin-1 Supplement
ý	253	253	0xFD	U+00FD	&yacute;	Latin small letter y with acute	Latin-1 Supplement
þ	254	254	0xFE	U+00FE	&thorn;	Latin small letter thorn	Latin-1 Supplement

### 3. ISO-8859-1 characters not present in ANSI

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ANSI is a superset of ISO-8859-1, and so there are no characters in this category.

### 4. ISO-8859-1 characters not present in MacRoman

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Character	ISO Number	Unicode Number	ISO Hex	Unicode Hex	HTML 4.0 Entity	Unicode Name	Unicode Range
¤	164	164	0xA4	U+00A4	&curren;	currency sign	Latin-1 Supplement
¸	166	166	0xA6	U+00A6	&brvbar;	broken bar	Latin-1 Supplement
	173	173	0xAD	U+00AD	&shy;	soft hyphen	Latin-1 Supplement
²	178	178	0xB2	U+00B2	&sup2;	superscript two	Latin-1 Supplement
³	179	179	0xB3	U+00B3	&sup3;	superscript three	Latin-1 Supplement
¹	185	185	0xB9	U+00B9	&sup1;	superscript one	Latin-1 Supplement
¼	188	188	0xBC	U+00BC	&frac14;	vulgar fraction one quarter	Latin-1 Supplement
½	189	189	0xBD	U+00BD	&frac12;	vulgar fraction one half	Latin-1 Supplement
	190	190	0xBE	U+00BE	&frac34;	vulgar fraction three	Latin-1

¾						quarters	Supplement
Ð	208	208	0xD0	U+00D0	&ETH;	Latin capital letter Eth	Latin-1 Supplement
×	215	215	0xD7	U+00D7	&times;	multiplication sign	Latin-1 Supplement
Ý	221	221	0xDD	U+00DD	&Yacute;	Latin capital letter Y with acute	Latin-1 Supplement
Þ	222	222	0xDE	U+00DE	&THORN;	Latin capital letter Thorn	Latin-1 Supplement
ð	240	240	0xF0	U+00F0	&eth;	Latin small letter eth	Latin-1 Supplement
ý	253	253	0xFD	U+00FD	&yacute;	Latin small letter y with acute	Latin-1 Supplement
þ	254	254	0xFE	U+00FE	&thorn;	Latin small letter thorn	Latin-1 Supplement

## 5. MacRoman characters not present in ANSI

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Character	Macintosh Number	Unicode Number	Macintosh Hex	Unicode Hex	HTML 4.0 Entity	Unicode Name	Unicode Range
≠	173	8800	0xAD	U+2260	&ne;	not equal to	Mathematical Operators
∞	176	8734	0xB0	U+221E	&infin;	infinity	Mathematical Operators
≤	178	8804	0xB2	U+2264	&le;	less-than or equal to	Mathematical Operators
≥	179	8805	0xB3	U+2265	&ge;	greater-than or equal to	Mathematical Operators
∂	182	8706	0xB6	U+2202	&part;	partial differential	Mathematical Operators
Σ	183	8721	0xB7	U+2211	&sum;	n-ary summation	Mathematical Operators
Π	184	8719	0xB8	U+220F	&prod;	n-ary product	Mathematical Operators
π	185	960	0xB9	U+03C0	&pi;	Greek small letter pi	Greek
	186	8747	0xBA	U+222B	&int;	integral	Mathematical

∫							Operators
Ω	189	937	0xBD	U+03A9	&Omega;	Greek capital letter Omega	Greek
√	195	8730	0xC3	U+221A	&radic;	square root	Mathematical Operators
≈	197	8776	0xC5	U+2248	&asymp;	almost equal to	Mathematical Operators
Δ	198	8710	0xC6	U+2206		increment	Mathematical Operators
◇	215	9674	0xD7	U+25CA	&loz;	lozenge	Geometric Shapes
/	218	8260	0xDA	U+2044	&frasl;	fraction slash	General Punctuation
fi	222	64257	0xDE	U+FB01		Latin small ligature fi	Alphabetic Presentation Forms
fl	223	64258	0xDF	U+FB02		Latin small ligature fl	Alphabetic Presentation Forms
🍏	240	63743	0xF0	U+F8FF		Apple logo	Private Use Area
ı	245	305	0xF5	U+0131		Latin small letter dotless i	Latin Extended-A
˘	249	728	0xF9	U+02D8		breve	Spacing Modifier Letters
˙	250	729	0xFA	U+02D9		dot above	Spacing Modifier Letters
˚	251	730	0xFB	U+02DA		ring above	Spacing Modifier Letters
˝	253	733	0xFD	U+02DD		double acute accent	Spacing Modifier Letters
˛	254	731	0xFE	U+02DB		ogonek	Spacing Modifier Letters

✓	255	711	0xFF	U+02C7		caron	Spacing Modifier Letters
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## 6. MacRoman characters not present in ISO-8859-1

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Character	Macintosh Number	Unicode Number	Macintosh Hex	Unicode Hex	HTML 4.0 Entity	Unicode Name	Unicode Range
†	160	8224	0xA0	U+2020	&dagger;	dagger	General Punctuation
•	165	8226	0xA5	U+2022	&bull;	bullet	General Punctuation
™	170	8482	0xAA	U+2122	&trade;	trade mark sign	Letterlike Symbols
≠	173	8800	0xAD	U+2260	&ne;	not equal to	Mathematical Operators
∞	176	8734	0xB0	U+221E	&infin;	infinity	Mathematical Operators
≤	178	8804	0xB2	U+2264	&le;	less-than or equal to	Mathematical Operators
≥	179	8805	0xB3	U+2265	&ge;	greater-than or equal to	Mathematical Operators
∂	182	8706	0xB6	U+2202	&part;	partial differential	Mathematical Operators
Σ	183	8721	0xB7	U+2211	&sum;	n-ary summation	Mathematical Operators
Π	184	8719	0xB8	U+220F	&prod;	n-ary product	Mathematical Operators
π	185	960	0xB9	U+03C0	&pi;	Greek small letter pi	Greek
∫	186	8747	0xBA	U+222B	&int;	integral	Mathematical Operators
Ω	189	937	0xBD	U+03A9	&Omega;	Greek capital letter Omega	Greek
√	195	8730	0xC3	U+221A	&radic;	square root	Mathematical Operators
	197	8776	0xC5	U+2248	&asymp;	almost equal	Mathematical

≈						to	Operators
Δ	198	8710	0xC6	U+2206		increment	Mathematical Operators
...	201	8230	0xC9	U+2026	&hellip;	horizontal ellipsis	General Punctuation
Œ	206	338	0xCE	U+0152	&OElig;	Latin capital ligature OE	Latin Extended-A
œ	207	339	0xCF	U+0153	&oelig;	Latin small ligature oe	Latin Extended-A
—	208	8211	0xD0	U+2013	&ndash;	en dash	General Punctuation
—	209	8212	0xD1	U+2014	&mdash;	em dash	General Punctuation
“	210	8220	0xD2	U+201C	&ldquo;	left double quotation mark	General Punctuation
”	211	8221	0xD3	U+201D	&rdquo;	right double quotation mark	General Punctuation
‘	212	8216	0xD4	U+2018	&lsquo;	left single quotation mark	General Punctuation
’	213	8217	0xD5	U+2019	&rsquo;	right single quotation mark	General Punctuation
◊	215	9674	0xD7	U+25CA	&loz;	lozenge	Geometric Shapes
ÿ	217	376	0xD9	U+0178	&Yuml;	Latin capital letter Y with diaeresis	Latin Extended-A
/	218	8260	0xDA	U+2044	&frasl;	fraction slash	General Punctuation
€	219	8364	0xDB	U+20AC	&euro;	euro sign	Currency Symbols
<	220	8249	0xDC	U+2039	&lsaquo;	single left-pointing angle quotation mark	General Punctuation
>	221	8250	0xDD	U+203A	&rsaquo;	single right-pointing angle	General Punctuation



						quotation mark	
fi	222	64257	0xDE	U+FB01		Latin small ligature fi	Alphabetic Presentation Forms
fl	223	64258	0xDF	U+FB02		Latin small ligature fl	Alphabetic Presentation Forms
‡	224	8225	0xE0	U+2021	&Dagger;	double dagger	General Punctuation
,	226	8218	0xE2	U+201A	&sbquo;	single low-9 quotation mark	General Punctuation
”	227	8222	0xE3	U+201E	&bdquo;	double low-9 quotation mark	General Punctuation
‰	228	8240	0xE4	U+2030	&permil;	per mille sign	General Punctuation
🍏	240	63743	0xF0	U+F8FF		Apple logo	Private Use Area
ı	245	305	0xF5	U+0131		Latin small letter dotless i	Latin Extended-A
^	246	710	0xF6	U+02C6	&circ;	modifier letter circumflex accent	Spacing Modifier Letters
~	247	732	0xF7	U+02DC	&tilde;	small tilde	Spacing Modifier Letters
˘	249	728	0xF9	U+02D8		breve	Spacing Modifier Letters
·	250	729	0xFA	U+02D9		dot above	Spacing Modifier Letters
°	251	730	0xFB	U+02DA		ring above	Spacing Modifier Letters
¨	253	733	0xFD	U+02DD		double acute accent	Spacing Modifier Letters
	254	731	0xFE	U+02DB		ogonek	Spacing

¸							Modifier Letters
ˇ	255	711	0xFF	U+02C7		caron	Spacing Modifier Letters

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