**Supplemental Arrows-B**

**Range: 2900–297F**

This file contains an excerpt from the character code tables and list of character names for *The Unicode Standard, Version 11.0*

This file may be changed at any time without notice to reflect errata or other updates to the Unicode Standard. See [http://www.unicode.org/errata/](http://www.unicode.org/errata/) for an up-to-date list of errata.

See [http://www.unicode.org/charts/](http://www.unicode.org/charts/) for access to a complete list of the latest character code charts. See [http://www.unicode.org/charts/PDF/Unicode-11.0/](http://www.unicode.org/charts/PDF/Unicode-11.0/) for charts showing only the characters added in Unicode 11.0. See [http://www.unicode.org/Public/11.0.0/charts/](http://www.unicode.org/Public/11.0.0/charts/) for a complete archived file of character code charts for Unicode 11.0.

**Disclaimer**

These charts are provided as the online reference to the character contents of the Unicode Standard, Version 11.0 but do not provide all the information needed to fully support individual scripts using the Unicode Standard. For a complete understanding of the use of the characters contained in this file, please consult the appropriate sections of *The Unicode Standard, Version 11.0*, online at [http://www.unicode.org/versions/Unicode11.0.0/](http://www.unicode.org/versions/Unicode11.0.0/), as well as Unicode Standard Annexes #9, #11, #14, #15, #24, #29, #31, #34, #38, #41, #42, #44, #45, and #50, the other Unicode Technical Reports and Standards, and the Unicode Character Database, which are available online.


A thorough understanding of the information contained in these additional sources is required for a successful implementation.

**Fonts**

The shapes of the reference glyphs used in these code charts are not prescriptive. Considerable variation is to be expected in actual fonts. The particular fonts used in these charts were provided to the Unicode Consortium by a number of different font designers, who own the rights to the fonts.


**Terms of Use**

You may freely use these code charts for personal or internal business uses only. You may not incorporate them either wholly or in part into any product or publication, or otherwise distribute them without express written permission from the Unicode Consortium. However, you may provide links to these charts.

The fonts and font data used in production of these code charts may NOT be extracted, or used in any other way in any product or publication, without permission or license granted by the typeface owner(s).

The Unicode Consortium is not liable for errors or omissions in this file or the standard itself. Information on characters added to the Unicode Standard since the publication of the most recent version of the Unicode Standard, as well as on characters currently being considered for addition to the Unicode Standard can be found on the Unicode web site.

See [http://www.unicode.org/pending/pending.html](http://www.unicode.org/pending/pending.html) and [http://www.unicode.org/alloc/Pipeline.html](http://www.unicode.org/alloc/Pipeline.html).

Copyright © 1991-2018 Unicode, Inc. All rights reserved.
2900  \( \rightarrow \)  RIGHTWARDS TWO-HEADED ARROW WITH VERTICAL STROKE
= z notation partial surjection
\( \rightarrow 2B3E \)  leftwards two-headed arrow with vertical stroke
2901  \( \rightarrow \)  RIGHTWARDS TWO-HEADED ARROW WITH DOUBLE VERTICAL STROKE
= z notation finite surjection
\( \rightarrow 2B3F \)  leftwards two-headed arrow with double vertical stroke
2902  \( \leftarrow \)  LEFTWARDS DOUBLE ARROW WITH VERTICAL STROKE
2903  \( \rightarrow \)  RIGHTWARDS DOUBLE ARROW WITH VERTICAL STROKE
2904  \( \leftarrow \)  LEFT RIGHT DOUBLE ARROW WITH VERTICAL STROKE
2905  \( \leftrightarrow \)  RIGHTWARDS TWO-HEADED ARROW FROM BAR
= maps to
\( \rightarrow 2B36 \)  leftwards two-headed arrow from bar
2906  \( \ll \)  LEFTWARDS DOUBLE ARROW FROM BAR
= maps from
\( \rightarrow 27F6 \)  long leftwards arrow from bar
2907  \( \Rightarrow \)  RIGHTWARDS DOUBLE ARROW FROM BAR
= maps to
\( \rightarrow 27FC \)  long rightwards arrow from bar
2908  \( \downarrow \)  DOWNWARDS ARROW WITH HORIZONTAL STROKE
2909  \( \uparrow \)  UPWARDS ARROW WITH HORIZONTAL STROKE
290A  \( \leftarrow \)  UPWARDS TRIPLE ARROW
\( \rightarrow 21D1 \)  upwards double arrow
\( \rightarrow 27F0 \)  upwards quadruple arrow
290B  \( \downarrow \)  DOWNWARDS TRIPLE ARROW
\( \rightarrow 21D3 \)  downwards double arrow
\( \rightarrow 27F1 \)  downwards quadruple arrow
290C  \( \leftarrow \)  LEFTWARDS DOUBLE DASH ARROW
290D  \( \rightarrow \)  RIGHTWARDS DOUBLE DASH ARROW
290E  \( \leftarrow \)  LEFTWARDS TRIPLE DASH ARROW
290F  \( \rightarrow \)  RIGHTWARDS TRIPLE DASH ARROW
2910  \( \leftrightarrow \)  RIGHTWARDS TWO-HEADED TRIPLE DASH ARROW
\( \rightarrow 2B37 \)  leftwards two-headed triple dash arrow
2911  \( \rightarrow \)  RIGHTWARDS ARROW WITH DOTTED STEM
\( \rightarrow 2B38 \)  leftwards arrow with dotted stem
2912  \( \uparrow \)  UPWARDS ARROW TO BAR
2913  \( \downarrow \)  DOWNWARDS ARROW TO BAR
2914  \( \Rightarrow \)  RIGHTWARDS ARROW WITH TAIL WITH VERTICAL STROKE
= z notation partial injection
\( \rightarrow 2B39 \)  leftwards arrow with tail with vertical stroke
2915  \( \Rightarrow \)  RIGHTWARDS ARROW WITH TAIL WITH DOUBLE VERTICAL STROKE
= z notation finite injection
\( \rightarrow 2B3A \)  leftwards arrow with tail with double vertical stroke
2916  \( \Rightarrow \)  RIGHTWARDS TWO-HEADED ARROW WITH TAIL
= bijective mapping
= z notation bijection
\( \rightarrow 2B3B \)  leftwards two-headed arrow with tail
2917  \( \Rightarrow \)  RIGHTWARDS TWO-HEADED ARROW WITH TAIL WITH VERTICAL STROKE
= z notation surjective injection
\( \rightarrow 2B3C \)  leftwards two-headed arrow with tail with vertical stroke
2918  \( \Rightarrow \)  RIGHTWARDS TWO-HEADED ARROW WITH TAIL WITH DOUBLE VERTICAL STROKE
= z notation finite surjective injection
\( \rightarrow 2B3D \)  leftwards two-headed arrow with tail with double vertical stroke

Arrow tails
2919  \( \leftarrow \)  LEFTWARDS ARROW-TAIL
291A  \( \rightarrow \)  RIGHTWARDS ARROW-TAIL
291B  \( \leftarrow \)  LEFTWARDS DOUBLE ARROW-TAIL
291C  \( \rightarrow \)  RIGHTWARDS DOUBLE ARROW-TAIL

Miscellaneous arrows
291D  \( \leftarrow \)  LEFTWARDS ARROW TO BLACK DIAMOND
291E  \( \rightarrow \)  RIGHTWARDS ARROW TO BLACK DIAMOND
291F  \( \leftarrow \)  LEFTWARDS ARROW FROM BAR TO BLACK DIAMOND
2920  \( \Rightarrow \)  RIGHTWARDS ARROW FROM BAR TO BLACK DIAMOND
2921  \( \nLeft \)  NORTH WEST AND SOUTH EAST ARROW
2922  \( \nRight \)  NORTH EAST AND SOUTH WEST ARROW
2923  \( \nNorth \)  NORTH WEST ARROW WITH HOOK
2924  \( \nSouth \)  NORTH EAST ARROW WITH HOOK
2925  \( \nWest \)  SOUTH EAST ARROW WITH HOOK
2926  \( \nEast \)  SOUTH WEST ARROW WITH HOOK

Crossing arrows for knot theory
2927  \( \times \)  NORTH WEST ARROW AND NORTH EAST ARROW
2928  \( \times \)  NORTH EAST ARROW AND SOUTH EAST ARROW
2929  \( \times \)  SOUTH EAST ARROW AND SOUTH WEST ARROW
292A  \( \times \)  SOUTH WEST ARROW AND NORTH WEST ARROW
292B  \( \times \)  RISING DIAGONAL CROSSING FALLING DIAGONAL
292C  \( \times \)  FALLING DIAGONAL CROSSING RISING DIAGONAL
\( \rightarrow 26CC \)  crossing lanes
292D  \( \times \)  SOUTH EAST ARROW CROSSING NORTH EAST ARROW
292E  \( \times \)  NORTH EAST ARROW CROSSING SOUTH EAST ARROW
292F  \( \times \)  FALLING DIAGONAL CROSSING NORTH EAST ARROW
2930  \( \times \)  RISING DIAGONAL CROSSING SOUTH EAST ARROW
2931  \( \times \)  NORTH EAST ARROW CROSSING NORTH WEST ARROW
2932  \( \times \)  NORTH WEST ARROW CROSSING NORTH EAST ARROW

Miscellaneous curved arrows
2933  \( \sim \)  WAVE ARROW POINTING DIRECTLY RIGHT
\( \rightarrow 2190 \)  rightwards wave arrow
\( \rightarrow 2B3F \)  wave arrow pointing directly left
2934  \( \nRight \)  ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS
2935  \( \nLeft \)  ARROW POINTING RIGHTWARDS THEN CURVING DOWNWARDS

The Unicode Standard 11.0, Copyright © 1991-2018 Unicode, Inc. All rights reserved.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2936</td>
<td>ARROW POINTING DOWNWARDS THEN CURVING LEFTWARDS</td>
</tr>
<tr>
<td>2937</td>
<td>ARROW POINTING DOWNWARDS THEN CURVING RIGHTWARDS</td>
</tr>
<tr>
<td>2938</td>
<td>RIGHT-SIDE ARC CLOCKWISE ARROW</td>
</tr>
<tr>
<td>2939</td>
<td>LEFT-SIDE ARC ANTICLOCKWISE ARROW</td>
</tr>
<tr>
<td>293A</td>
<td>TOP ARC ANTICLOCKWISE ARROW</td>
</tr>
<tr>
<td>293B</td>
<td>BOTTOM ARC ANTICLOCKWISE ARROW</td>
</tr>
<tr>
<td>293C</td>
<td>TOP ARC CLOCKWISE ARROW WITH MINUS</td>
</tr>
<tr>
<td>293D</td>
<td>TOP ARC ANTICLOCKWISE ARROW WITH PLUS</td>
</tr>
<tr>
<td>293E</td>
<td>LOWER RIGHT SEMICIRCULAR CLOCKWISE ARROW</td>
</tr>
<tr>
<td>293F</td>
<td>LOWER LEFT SEMICIRCULAR ANTICLOCKWISE ARROW</td>
</tr>
<tr>
<td>2940</td>
<td>ANTICLOCKWISE CLOSED CIRCLE ARROW</td>
</tr>
<tr>
<td>2941</td>
<td>CLOCKWISE CLOSED CIRCLE ARROW</td>
</tr>
<tr>
<td>2942</td>
<td>RIGHTWARDS ARROW ABOVE SHORT LEFTWARDS ARROW</td>
</tr>
<tr>
<td>2943</td>
<td>LEFTWARDS ARROW ABOVE SHORT RIGHTWARDS ARROW</td>
</tr>
<tr>
<td>2944</td>
<td>SHORT RIGHTWARDS ARROW ABOVE LEFTWARDS ARROW</td>
</tr>
<tr>
<td>2945</td>
<td>RIGHTWARDS ARROW WITH PLUS BELOW</td>
</tr>
<tr>
<td>2946</td>
<td>LEFTWARDS ARROW WITH PLUS BELOW</td>
</tr>
<tr>
<td>2947</td>
<td>RIGHTWARDS ARROW THROUGH X</td>
</tr>
<tr>
<td>2948</td>
<td>LEFT RIGHT ARROW THROUGH SMALL CIRCLE</td>
</tr>
<tr>
<td>2949</td>
<td>UPWARDS TWO-HEADED ARROW FROM SMALL CIRCLE</td>
</tr>
<tr>
<td>2950</td>
<td>LEFT BARB DOWN RIGHT BAR RIGHT HARPOON</td>
</tr>
<tr>
<td>2951</td>
<td>UP BARB LEFT DOWN BAR LEFT HARPOON</td>
</tr>
<tr>
<td>2952</td>
<td>LEFTWARDS HARPOON WITH BARB UP TO BAR</td>
</tr>
<tr>
<td>2953</td>
<td>RIGHTWARDS HARPOON WITH BARB UP TO BAR</td>
</tr>
<tr>
<td>2954</td>
<td>UPWARDS HARPOON WITH BARB RIGHT TO BAR</td>
</tr>
<tr>
<td>2955</td>
<td>DOWNWARDS HARPOON WITH BARB RIGHT TO BAR</td>
</tr>
<tr>
<td>2956</td>
<td>LEFTWARDS HARPOON WITH BARB DOWN TO BAR</td>
</tr>
<tr>
<td>2957</td>
<td>RIGHTWARDS HARPOON WITH BARB DOWN TO BAR</td>
</tr>
<tr>
<td>2958</td>
<td>UPWARDS HARPOON WITH BARB LEFT TO BAR</td>
</tr>
<tr>
<td>2959</td>
<td>DOWNWARDS HARPOON WITH BARB LEFT TO BAR</td>
</tr>
<tr>
<td>295A</td>
<td>LEFTWARDS HARPOON WITH BARB UP FROM BAR</td>
</tr>
<tr>
<td>295B</td>
<td>RIGHTWARDS HARPOON WITH BARB UP FROM BAR</td>
</tr>
<tr>
<td>295C</td>
<td>UPWARDS HARPOON WITH BARB RIGHT FROM BAR</td>
</tr>
<tr>
<td>295D</td>
<td>DOWNWARDS HARPOON WITH BARB RIGHT FROM BAR</td>
</tr>
<tr>
<td>295E</td>
<td>LEFTWARDS HARPOON WITH BARB DOWN FROM BAR</td>
</tr>
<tr>
<td>295F</td>
<td>RIGHTWARDS HARPOON WITH BARB DOWN FROM BAR</td>
</tr>
<tr>
<td>2960</td>
<td>UPWARDS HARPOON WITH BARB LEFT FROM BAR</td>
</tr>
<tr>
<td>2961</td>
<td>DOWNWARDS HARPOON WITH BARB LEFT FROM BAR</td>
</tr>
</tbody>
</table>

**Paired harpoons**

- 2962  | ⇙  LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS HARPOON WITH BARB UP
- 2963  | ⇝  UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS HARPOON WITH BARB RIGHT
- 2964  | ⇜  RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON WITH BARB DOWN
- 2965  | ⇟  DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON WITH BARB DOWN

**Double-barbed harpoons**

- 2966  | ⇙  LEFTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON WITH BARB UP
- 2967  | ⇝  LEFTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON WITH BARB UP
- 2968  | ⇜  RIGHTWARDS HARPOON WITH BARB DOWN ABOVE LEFTWARDS HARPOON WITH BARB UP
- 2969  | ⇟  RIGHTWARDS HARPOON WITH BARB DOWN ABOVE LEFTWARDS HARPOON WITH BARB DOWN
- 296A  | ⇙  LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH
- 296B  | ⇝  LEFTWARDS HARPOON WITH BARB DOWN BELOW LONG DASH
- 296C  | ⇜  RIGHTWARDS HARPOON WITH BARB UP ABOVE LONG DASH
- 296D  | ⇟  RIGHTWARDS HARPOON WITH BARB DOWN BELOW LONG DASH
- 296E  | ⇙  UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON WITH BARB RIGHT
- 296F  | ⇝  DOWNWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS HARPOON WITH BARB RIGHT

**Miscellaneous arrow**

- 2970  | ⇝  RIGHT DOUBLE ARROW WITH ROUNDED HEAD

**Arrows combined with operators**

- 2971  | ⇙  EQUALS SIGN ABOVE RIGHTWARDS ARROW
- 2972  | ⇝  TILDE OPERATOR ABOVE RIGHTWARDS ARROW
- 2973  | ⇜  LEFTWARDS ARROW ABOVE TILDE OPERATOR
- 2974  | ⇟  RIGHTWARDS ARROW ABOVE TILDE OPERATOR
- 2975  | ⇙  RIGHTWARDS ARROW ABOVE ALMOST EQUAL TO

**Arrows combined with relations**

- 2976  | ⇙  superset of
- 2977  | ⇝  operator
- 2978  | ⇜  operator
- 2979  | ⇟  operator
<table>
<thead>
<tr>
<th>Code</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U+2976</td>
<td>⦏</td>
<td>LEFTWARDS ARROW THROUGH LESS-THAN</td>
</tr>
<tr>
<td>U+2977</td>
<td>⦐</td>
<td>GREATER-TAN ABOVE RIGHTWARDS ARROW</td>
</tr>
<tr>
<td>U+2978</td>
<td>⦑</td>
<td>SUBSET ABOVE RIGHTWARDS ARROW</td>
</tr>
<tr>
<td>U+2979</td>
<td>⦒</td>
<td>LEFTWARDS ARROW THROUGH SUBSET</td>
</tr>
<tr>
<td>U+297A</td>
<td>⦓</td>
<td>SUPERSET ABOVE LEFTWARDS ARROW</td>
</tr>
</tbody>
</table>

**Fish tails**

<table>
<thead>
<tr>
<th>Code</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U+297C</td>
<td>⦍</td>
<td>LEFT FISH TAIL</td>
</tr>
<tr>
<td>U+297D</td>
<td>⦎</td>
<td>RIGHT FISH TAIL</td>
</tr>
<tr>
<td>U+297E</td>
<td>⦏</td>
<td>UP FISH TAIL</td>
</tr>
<tr>
<td>U+297F</td>
<td>⦐</td>
<td>DOWN FISH TAIL</td>
</tr>
</tbody>
</table>