

## 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 15.0*

This file may be changed at any time without notice to reflect errata or other updates to the Unicode Standard.  
*See <https://www.unicode.org/errata/> for an up-to-date list of errata.*

See <https://www.unicode.org/charts/> for access to a complete list of the latest character code charts.  
See <https://www.unicode.org/charts/PDF/Unicode-15.0/> for charts showing only the characters added in Unicode 15.0.  
See <https://www.unicode.org/Public/15.0.0/charts/> for a complete archived file of character code charts for Unicode 15.0.  
See <https://www.unicode.org/charts/About.html#Conventions> for conventions used in these code charts, and other general information.

### Disclaimer

These charts are provided as the online reference to the character contents of the Unicode Standard, Version 15.0 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 15.0, online at <https://www.unicode.org/versions/Unicode15.0.0/>, 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.

*See <https://www.unicode.org/ucd/> and <https://www.unicode.org/reports/>*

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

Copying characters from the character code tables or list of character names is not recommended, because for production reasons the PDF files for the code charts cannot guarantee that the correct character codes will always be copied.

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*See <https://www.unicode.org/charts/fonts.html> for a list.*

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






























































































































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*See <https://www.unicode.org/pending/pending.html> and <https://www.unicode.org/alloc/Pipeline.html>.*

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	290	291	292	293	294	295	296	297
0	 2900	 2910	 2920	 2930	 2940	 2950	 2960	 2970
1	 2901	 2911	 2921	 2931	 2941	 2951	 2961	 2971
2	 2902	 2912	 2922	 2932	 2942	 2952	 2962	 2972
3	 2903	 2913	 2923	 2933	 2943	 2953	 2963	 2973
4	 2904	 2914	 2924	 2934	 2944	 2954	 2964	 2974
5	 2905	 2915	 2925	 2935	 2945	 2955	 2965	 2975
6	 2906	 2916	 2926	 2936	 2946	 2956	 2966	 2976
7	 2907	 2917	 2927	 2937	 2947	 2957	 2967	 2977
8	 2908	 2918	 2928	 2938	 2948	 2958	 2968	 2978
9	 2909	 2919	 2929	 2939	 2949	 2959	 2969	 2979
A	 290A	 291A	 292A	 293A	 294A	 295A	 296A	 297A
B	 290B	 291B	 292B	 293B	 294B	 295B	 296B	 297B
C	 290C	 291C	 292C	 293C	 294C	 295C	 296C	 297C
D	 290D	 291D	 292D	 293D	 294D	 295D	 296D	 297D
E	 290E	 291E	 292E	 293E	 294E	 295E	 296E	 297E
F	 290F	 291F	 292F	 293F	 294F	 295F	 296F	 297F

**Miscellaneous arrows**

- 2900  $\Rightarrow$  RIGHTWARDS TWO-HEADED ARROW WITH VERTICAL STROKE  
= z notation partial surjection  
 $\rightarrow$  2B34  $\Leftrightarrow$  leftwards two-headed arrow with vertical stroke
- 2901  $\Rightarrow$  RIGHTWARDS TWO-HEADED ARROW WITH DOUBLE VERTICAL STROKE  
= z notation finite surjection  
 $\rightarrow$  2B35  $\Leftrightarrow$  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  $\Leftrightarrow$  LEFT RIGHT DOUBLE ARROW WITH VERTICAL STROKE
- 2905  $\mapsto$  RIGHTWARDS TWO-HEADED ARROW FROM BAR  
= maps to  
 $\rightarrow$  2B36  $\Leftarrow$  leftwards two-headed arrow from bar
- 2906  $\Leftarrow$  LEFTWARDS DOUBLE ARROW FROM BAR  
= maps from  
 $\rightarrow$  27FB  $\Leftarrow$  long leftwards arrow from bar
- 2907  $\mapsto$  RIGHTWARDS DOUBLE ARROW FROM BAR  
= maps to  
 $\rightarrow$  27FC  $\mapsto$  long rightwards arrow from bar
- 2908  $\Downarrow$  DOWNWARDS ARROW WITH HORIZONTAL STROKE
- 2909  $\Uparrow$  UPWARDS ARROW WITH HORIZONTAL STROKE
- 290A  $\Updownarrow$  UPWARDS TRIPLE ARROW  
 $\rightarrow$  21D1  $\Updownarrow$  upwards double arrow  
 $\rightarrow$  27F0  $\Updownarrow$  upwards quadruple arrow
- 290B  $\Downarrow$  DOWNWARDS TRIPLE ARROW  
 $\rightarrow$  21D3  $\Downarrow$  downwards double arrow  
 $\rightarrow$  27F1  $\Downarrow$  downwards quadruple arrow
- 290C  $\dashleftarrow$  LEFTWARDS DOUBLE DASH ARROW
- 290D  $\dashrightarrow$  RIGHTWARDS DOUBLE DASH ARROW
- 290E  $\dashleftarrow$  LEFTWARDS TRIPLE DASH ARROW
- 290F  $\dashrightarrow$  RIGHTWARDS TRIPLE DASH ARROW
- 2910  $\Rightarrow$  RIGHTWARDS TWO-HEADED TRIPLE DASH ARROW  
 $\rightarrow$  2B37  $\Leftrightarrow$  leftwards two-headed triple dash arrow
- 2911  $\rightarrow$  RIGHTWARDS ARROW WITH DOTTED STEM  
 $\rightarrow$  2B38  $\Leftarrow$  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  $\Leftarrow$  leftwards arrow with tail with vertical stroke
- 2915  $\Rightarrow$  RIGHTWARDS ARROW WITH TAIL WITH DOUBLE VERTICAL STROKE  
= z notation finite injection  
 $\rightarrow$  2B3A  $\Leftarrow$  leftwards arrow with tail with double vertical stroke
- 2916  $\Rightarrow$  RIGHTWARDS TWO-HEADED ARROW WITH TAIL  
= bijective mapping  
= z notation bijection  
 $\rightarrow$  2B3B  $\Leftarrow$  leftwards two-headed arrow with tail

- 2917  $\Rightarrow$  RIGHTWARDS TWO-HEADED ARROW WITH TAIL WITH VERTICAL STROKE  
= z notation surjective injection  
 $\rightarrow$  2B3C  $\Leftarrow$  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  $\Leftarrow$  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  $\mapsto$  RIGHTWARDS ARROW FROM BAR TO BLACK DIAMOND
- 2921  $\nwarrow$  NORTH WEST AND SOUTH EAST ARROW
- 2922  $\nearrow$  NORTH EAST AND SOUTH WEST ARROW
- 2923  $\nwarrow$  NORTH WEST ARROW WITH HOOK
- 2924  $\nearrow$  NORTH EAST ARROW WITH HOOK
- 2925  $\searrow$  SOUTH EAST ARROW WITH HOOK
- 2926  $\swarrow$  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  $\times$  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  $\curvearrowright$  WAVE ARROW POINTING DIRECTLY RIGHT  
 $\rightarrow$  219D  $\curvearrowright$  rightwards wave arrow  
 $\rightarrow$  2B3F  $\Leftarrow$  wave arrow pointing directly left
- 2934  $\curvearrowup$  ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS
- 2935  $\curvearrowdown$  ARROW POINTING RIGHTWARDS THEN CURVING DOWNWARDS

- 2936 ↵ ARROW POINTING DOWNWARDS THEN CURVING LEFTWARDS  
 2937 ↶ ARROW POINTING DOWNWARDS THEN CURVING RIGHTWARDS  
 2938 ↷ RIGHT-SIDE ARC CLOCKWISE ARROW  
 2939 ↶ LEFT-SIDE ARC ANTICLOCKWISE ARROW  
 293A ↶ TOP ARC ANTICLOCKWISE ARROW  
 293B ↷ BOTTOM ARC ANTICLOCKWISE ARROW  
 293C ↶ TOP ARC CLOCKWISE ARROW WITH MINUS  
 293D ↶ TOP ARC ANTICLOCKWISE ARROW WITH PLUS  
 293E ↷ LOWER RIGHT SEMICIRCULAR CLOCKWISE ARROW  
 293F ↶ LOWER LEFT SEMICIRCULAR ANTICLOCKWISE ARROW  
 2940 ⌚ ANTICLOCKWISE CLOSED CIRCLE ARROW  
 → 20DA ⌚ combining anticlockwise ring overlay  
 2941 ⌚ CLOCKWISE CLOSED CIRCLE ARROW  
 → 20D9 ⌚ combining clockwise ring overlay

**Arrows combined with operators**

- 2942 ⇄ RIGHTWARDS ARROW ABOVE SHORT LEFTWARDS ARROW  
 2943 ⇄ LEFTWARDS ARROW ABOVE SHORT RIGHTWARDS ARROW  
 2944 ⇄ SHORT RIGHTWARDS ARROW ABOVE LEFTWARDS ARROW  
 2945 ⇄ RIGHTWARDS ARROW WITH PLUS BELOW  
 2946 ⇄ LEFTWARDS ARROW WITH PLUS BELOW  
 2947 ⇄ RIGHTWARDS ARROW THROUGH X  
 → 2B3E ⇄ leftwards arrow through x  
 2948 ⇄ LEFT RIGHT ARROW THROUGH SMALL CIRCLE  
 2949 ⇄ UPWARDS TWO-HEADED ARROW FROM SMALL CIRCLE

**Double-barbed harpoons**

- 294A ⇄ LEFT BARB UP RIGHT BARB DOWN HARPOON  
 294B ⇄ LEFT BARB DOWN RIGHT BARB UP HARPOON  
 294C ⇄ UP BARB RIGHT DOWN BARB LEFT HARPOON  
 294D ⇄ UP BARB LEFT DOWN BARB RIGHT HARPOON  
 294E ⇄ LEFT BARB UP RIGHT BARB UP HARPOON  
 294F ⇄ UP BARB RIGHT DOWN BARB RIGHT HARPOON  
 2950 ⇄ LEFT BARB DOWN RIGHT BARB DOWN HARPOON  
 2951 ⇄ UP BARB LEFT DOWN BARB LEFT HARPOON

**Modified harpoons**

- 2952 ⇄ LEFTWARDS HARPOON WITH BARB UP TO BAR  
 2953 ⇄ RIGHTWARDS HARPOON WITH BARB UP TO BAR  
 2954 ⇄ UPWARDS HARPOON WITH BARB RIGHT TO BAR  
 2955 ⇄ DOWNWARDS HARPOON WITH BARB RIGHT TO BAR  
 2956 ⇄ LEFTWARDS HARPOON WITH BARB DOWN TO BAR  
 2957 ⇄ RIGHTWARDS HARPOON WITH BARB DOWN TO BAR  
 2958 ⇄ UPWARDS HARPOON WITH BARB LEFT TO BAR  
 2959 ⇄ DOWNWARDS HARPOON WITH BARB LEFT TO BAR  
 295A ⇄ LEFTWARDS HARPOON WITH BARB UP FROM BAR  
 295B ⇄ RIGHTWARDS HARPOON WITH BARB UP FROM BAR  
 295C ⇄ UPWARDS HARPOON WITH BARB RIGHT FROM BAR

- 295D ⇄ DOWNWARDS HARPOON WITH BARB RIGHT FROM BAR  
 295E ⇄ LEFTWARDS HARPOON WITH BARB DOWN FROM BAR  
 295F ⇄ RIGHTWARDS HARPOON WITH BARB DOWN FROM BAR  
 2960 ⇄ UPWARDS HARPOON WITH BARB LEFT FROM BAR  
 2961 ⇄ DOWNWARDS HARPOON WITH BARB LEFT FROM BAR

**Paired harpoons**

- 2962 ⇄ LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS HARPOON WITH BARB DOWN  
 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 RIGHT  
 2966 ⇄ LEFTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON WITH BARB UP  
 2967 ⇄ LEFTWARDS HARPOON WITH BARB DOWN ABOVE RIGHTWARDS HARPOON WITH BARB DOWN  
 2968 ⇄ RIGHTWARDS HARPOON WITH BARB UP 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  
 → 2283 ⇄ superset of

**Arrows combined with relations**

- 2971 ⇄ EQUALS SIGN ABOVE RIGHTWARDS ARROW  
 → 2B40 ⇄ equals sign above leftwards arrow  
 2972 ⇄ TILDE OPERATOR ABOVE RIGHTWARDS ARROW  
 → 2B41 ⇄ reverse tilde operator above leftwards arrow  
 2973 ⇄ LEFTWARDS ARROW ABOVE TILDE OPERATOR  
 → 2B4C ⇄ rightwards arrow above reverse tilde operator  
 2974 ⇄ RIGHTWARDS ARROW ABOVE TILDE OPERATOR  
 → 2B4B ⇄ leftwards arrow above reverse tilde operator  
 2975 ⇄ RIGHTWARDS ARROW ABOVE ALMOST EQUAL TO  
 → 2B42 ⇄ leftwards arrow above reverse almost equal to

2976	↖	LESS-THAN ABOVE LEFTWARDS ARROW
2977	↤	LEFTWARDS ARROW THROUGH LESS-THAN → 2B43 ➤ rightwards arrow through greater-than
2978	↗	GREATER-THAN ABOVE RIGHTWARDS ARROW
2979	↵	SUBSET ABOVE RIGHTWARDS ARROW
297A	↥	LEFTWARDS ARROW THROUGH SUBSET → 2B44 ➤ rightwards arrow through superset
297B	↦	SUPERSET ABOVE LEFTWARDS ARROW

**Fish tails**

297C	↵	LEFT FISH TAIL
297D	➡	RIGHT FISH TAIL
297E	↗	UP FISH TAIL
297F	↘	DOWN FISH TAIL