

The `babyloniannum` package

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I Introduction

This package can be used to typeset Babylonian numerals using \LaTeX or \TeX . It makes use of the Santakku Paleo-Babylonian font which can be downloaded at <http://www.hethport.uni-wuerzburg.de/cuneifont/>.

II Usage

`\babylonianfont`

Set the font used. Currently, only the Santakku font has been tested. Let me know if you get the package to work with other fonts.

Example usage: `\babylonianfont{Santakku}`

`\babyloniannum`

This is the main macro of this package. It takes a number between 1 and 59 as argument and typesets it with Babylonian numerals.

Example usage: `\babyloniannum{32}`

`\babylonian`

Like `\arabic` or `\roman`, this macro takes a counter name as argument and returns its Babylonian representation (only from 1 to 59 though).

For example, this documentation is typeset with:

`\renewcommand{\thesection}{\babylonian{section}}`

`\babyloniandisp`

This macro lets you print Babylonian characters using their unicode reference. It is used by `\babyloniannum` to display Babylonian numbers.

Example usage: `\babyloniandisp{1230B}`

III Table of characters

Below is the full list of Babylonian characters this package can typeset:

1	𐎶	21	𐎶𐎶	41	𐎶𐎶𐎶
2	𐎶𐎶	22	𐎶𐎶𐎶	42	𐎶𐎶𐎶𐎶
3	𐎶𐎶𐎶	23	𐎶𐎶𐎶𐎶	43	𐎶𐎶𐎶𐎶𐎶
4	𐎶𐎶𐎶𐎶	24	𐎶𐎶𐎶𐎶𐎶	44	𐎶𐎶𐎶𐎶𐎶𐎶
5	𐎶𐎶𐎶𐎶𐎶	25	𐎶𐎶𐎶𐎶𐎶𐎶	45	𐎶𐎶𐎶𐎶𐎶𐎶𐎶
6	𐎶𐎶𐎶𐎶𐎶𐎶	26	𐎶𐎶𐎶𐎶𐎶𐎶𐎶	46	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
7	𐎶𐎶𐎶𐎶𐎶𐎶𐎶	27	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	47	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
8	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	28	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	48	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
9	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	29	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	49	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
10	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	30	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	50	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
11	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	31	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	51	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
12	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	32	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	52	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
13	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	33	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	53	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
14	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	34	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	54	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
15	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	35	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	55	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
16	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	36	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	56	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
17	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	37	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	57	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
18	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	38	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	58	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
19	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	39	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	59	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶
20	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶	40	𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶𐎶		

𐎶 Implementation

```

1 \ProvidesPackage{babyloniannum}
2 \RequirePackage{fontspec}
3 \RequirePackage{xunicode}
4 \RequirePackage{numname}

\babylonianfont
5 \newcommand{\babylonianfont}{Santakku}

\babyloniandisp
6 \newcommand{\babyloniandisp}[1]{%
7   \fontspec{\babylonianfont}{\char"#1}}

\babylonian
8 \newcommand{\babylonian}[1]{%
9   \protect\babyloniannum{\arabic{#1}}}

\babylonianglyph
10 \newcommand{\babylonianglyph}[1]{%
11 \chardef\m@nten=10%
12 \numdigits{#1}%
13 \ifcase\c@xsm@mctr
14   \or
15   \babyloniandisp{1230B} %10
16   \or

```

```

17 \babyloniandisp{1230B}\kern-1.5pt{}\babyloniandisp{1230B} %20 -- unknown?
18 \or
19 \babyloniandisp{1230D} %30
20 \or
21 \babyloniandisp{1240F} %40
22 \or
23 \babyloniandisp{12410} %50
24 \fi
25 \ifnum \c@ism@mctr > \z@
26 \ifnum \c@xsm@mctr > \z@
27 \kern-1em{} % make glyphs closer
28 \fi
29 \fi
30 \ifcase\c@ism@mctr
31 \or
32 \babyloniandisp{12079} %1
33 \or
34 \babyloniandisp{1222B} %2
35 \or
36 \babyloniandisp{12408} %3
37 \or
38 \babyloniandisp{120FB} %4
39 \or
40 \babyloniandisp{1240A} %5
41 \or
42 \babyloniandisp{1240B} %6
43 \or
44 \babyloniandisp{1240C} %7
45 \or
46 \babyloniandisp{1240D} %8
47 \or
48 \babyloniandisp{1240E} %9
49 \fi
50 }

```

\babylonian@setcounters

```

51 \newcounter{baby@ism@mctr} % "units"
52 \newcounter{baby@xsm@mctr} % "tens"
53 \newcounter{baby@csm@mctr} % "hundreds"
54 \newcounter{baby@ksm@mctr} % "thousands"
55 \newcounter{baby@xksm@mctr} % "ten thousands"
56 \newcounter{baby@cksm@mctr} % "hundred thousands"
57 \newcounter{baby@msm@mctr} % "millions"
58 \newcounter{baby@xmsm@mctr} % "ten millions"
59 \newcounter{baby@csm@mctr} % "hundred millions"
60 \newcounter{baby@bsm@mctr} % "billions"
61 \newcommand{\babylonian@setcounters}{%
62 \setcounter{baby@ism@mctr}{\c@ism@mctr}%
63 \setcounter{baby@xsm@mctr}{\c@xsm@mctr}%
64 \setcounter{baby@csm@mctr}{\c@csm@mctr}%

```

```

65 \setcounter{baby@ksm@mctr}{\c@ksm@mctr}%
66 \setcounter{baby@xksm@mctr}{\c@xksm@mctr}%
67 \setcounter{baby@cksm@mctr}{\c@cksm@mctr}%
68 \setcounter{baby@msm@mctr}{\c@msm@mctr}%
69 \setcounter{baby@xmsm@mctr}{\c@xmsm@mctr}%
70 \setcounter{baby@csm@mctr}{\c@csm@mctr}%
71 \setcounter{baby@bsm@mctr}{\c@bsm@mctr}%
72 }

```

\babyloniannum

```

73 \newcommand{\babyloniannum}[1]{%
74 \chardef\m@ten=60%
75 \numdigits{#1}%
76 \babylonian@setcounters%
77 \babylonianglyph{\c@baby@bsm@mctr}%
78 \babylonianglyph{\c@baby@csm@mctr}%
79 \babylonianglyph{\c@baby@xmsm@mctr}%
80 \babylonianglyph{\c@baby@msm@mctr}%
81 \babylonianglyph{\c@baby@cksm@mctr}%
82 \babylonianglyph{\c@baby@xksm@mctr}%
83 \babylonianglyph{\c@baby@ksm@mctr}%
84 \babylonianglyph{\c@baby@csm@mctr}%
85 \babylonianglyph{\c@baby@xsm@mctr}%
86 \babylonianglyph{\c@baby@ism@mctr}%
87 }

```