WDS's article template

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August 24, 2001

Abstract — **WDS's LaTeX test sample article driving his style file. A lot of TeX stuff seems not to work in LaTeX2e. To do: Put if-draft on the draftcopy package? `pict2e`? Test fancy enumerate. `barenv`? more pictures? chemistry, chess? Space between toc lines is too large esp. between different secs. Fancyhdr puts no headers & footer on 1st page!!**

Keywords — Fermat, theorem.

Contents

1 Introduction

NOW IS THE TIME for all good men to come to the aid of their country [2][1]. AMS "Huge" math-environment DOES NOT WORK:

$$\mathrm{E}\,\mathrm{dist}(x,y) = \Pr \sqrt[3]{5} (\operatorname{im} z) \int_0^5 x \mathrm{d}x. \tag{1}$$

1.1 Subsection title

See table B.3 on page 5.

Theorem 1.1 (Ancients [1]). *The world is flat.*

1.1.1 Subsubsection title

Hence

$$\langle a \mid b \rangle = {}_pF_q \left(\begin{matrix} x\ y \\ r\ s \end{matrix} ; z \right). \tag{2}$$

See (EQ 2) and figure B.1. $\sqrt{76}$.

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[1]footnote

2 Next section title

¡Gauß! Høyer, Hervé, ŏ ŏ see §1. Château. Für mich. Háček. Pál Erdős. Gödel. Ernesto Cesáro. Øystein Ore. János Komlós. al-Khwârizanî. Stanisław Świe. Sauté. Voilà. Aquí. l'Année Résumé, Garçon. Here is a dittomark ".

Señor. Đurđanović. č. ĭ. ō. á. ó. ô. Đ. ə. a$\widetilde{\text{b}}$. ¿Huh? a_b. dag†. ddag‡. copyright©. AA:ÅåŁ. { # $ & £% }

Corollary 2.1 (Ancients). *The world is round.*

Proof. Obvious from algorithm 2.1. □

Corollary 2.2 (Ancients). *Is not.*

Proof. Sure. □

BD, boxed:

$$F(x)|_a^b = F(b) - F(a)$$

BE with special `tag*` (matrix for no parens, smallmatrix: $\left(\begin{smallmatrix} a & b & c \\ d & e & f \end{smallmatrix}\right)$ pmatrix for round, bmatrix for square brackets, Bmatrix for curly brackets, vmatrix for vertlines, Vmatrix for 2 vertlines on each side.):

$$X_{d\times a} = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1a} \\ x_{21} & x_{22} & \cdots & x_{2a} \\ \vdots & \vdots & \ddots & \vdots \\ x_{d1} & x_{d2} & \cdots & x_{da} \end{bmatrix} \tag*{[MyTag]}$$

BA, 3rd `nonumber`'d:

$$\begin{aligned} x^2 &= y^2 + z^2 \tag{2.3} \\ x^3 &< y^3 + z^3 \tag{2.4} \\ x^4 &< y^4 + z^4 + \text{nonumbered} \end{aligned}$$

Very long arrows:

$$X \xleftarrow[\text{Very long sub}]{\text{Long super}} Y \tag{2.5}$$

$$A \xrightarrow[\text{Very long sub}]{\text{Long super}} B \tag{2.6}$$

bordermatrix:

$$\begin{array}{c} \\ r_1 \\ r_2 \\ r_3 \end{array} \begin{array}{c} \begin{array}{ccc} c_1 & c_2 & c_3 \end{array} \\ \begin{pmatrix} 2 & 7 & 6 \\ 9 & 5 & 1 \\ 4 & 3 & 8 \end{pmatrix} \end{array}$$

$$\mathit{radius} * 2 = \mathit{diameter}$$

$$C = \begin{bmatrix} 1 & 0 & * & 0 & * & * \\ 0 & 1 & * & 0 & * & * \\ 0 & 0 & 0 & 1 & * & * \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}.$$

$$\begin{vmatrix} b & 0 \ \dots \ 0 \\ a_2 & \\ \vdots & \boxed{\quad D \quad} \\ a_n & \end{vmatrix} = b \det D.$$

Hello. Fill[‡] in your answer __________ here[†]. .

BE, cases, and boxed:

$$\boxed{\left(\frac{r}{p}\right) = \begin{cases} 0 & \text{if } r \equiv 0 \bmod p \\ 1 & \text{if } r \not\equiv 0 \text{ is a square mod } p \\ -1 & \text{otherwise} \end{cases}} \tag{2.7}$$

. . . .

I feel like going single column full wide for a moment. Yes this is super fun! Whoowee! Elvis is the King. Who cares about Monica Lewinsky?

Start ____ end.

Now for an algorithm.

Require: $n \geq 0 \vee x \neq 0$

Ensure: $y = x^n$ {ensure postcondition is purpose of algorithm}

```
y ← 1
if n < 0 then
   X ← 1/x
   N ← −n
else
   X ← x
   N ← n
end if
while N ≠ 0 do
   if N is even then
      X ← X × X
      N ← N/2
   else {N is odd}
      y ← y × X
      N ← N − 1
   end if
end while
```

Figure 2.1. Algorithm to calculate $y = x^n$.

A cross ref to the $X \leftarrow x$ line # FAILS!

A First appendix section

Lemma A.1 (Einstein). *$E = mc^2$.*

Benumerate:

1. first
2. second

Bflushright:

This is a right-justified paragraph here. Hopefully. Maybe this all has some use. We can only hope so. You can also use *Bcenter* (lines made of roughly equal lengths, then each line centered, with no attempt to make lines of exactly equal length) and *Bflushleft*.

BE[2] continued fraction using cfrac tfrac and dfrac are supposed to be textstyle and displaystyle...) idotsint, dotsb (*b*inary; also *c*omma), sideset for sum prime, idotsint:

$$\sum_{b=1}^{N}{}' \mathop{X}_{b}^{a} = \int\cdots\int_{|\vec{x}|<1} \cfrac{1}{\sqrt{2} + \cfrac{1}{\sqrt{3} + \cfrac{1}{\sqrt{4} + \cfrac{1}{\sqrt{5} + \cdots}}}} \mathrm{d}^d\vec{x} \tag{A.1}$$

EE.

Bitemize with handmade item arguments:

(aa) first

(bb) second

Bdinglist{43}:

☞ first

☞ second

Bdingautolist{172}:

① first

② second

References ① to dingautolist items work.

B Next appendix section

Definition B.1 (Edges in graphs). Two-tuples.

Bdescription:

Instance: first

Question: second

[†]Special symbol 2 marks this special footnote.

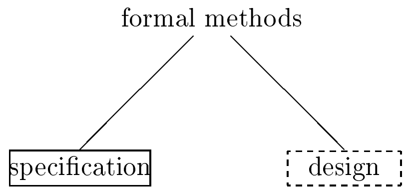
[§]Special symbol 4 marks this special footnote text, which has no text antecedent.

[2]Back to normal.

Various attempts to make better oint: $\boxed{\text{cint}}$, ccint, cvint, ccwint: [`\smash{a}b` does not have any superposing effect??!]

$$\oint z\mathrm{dz},\ \ointclockwise z\mathrm{dz},\ \ointctrclockwise z\mathrm{dz},\ \varointclockwise z\mathrm{dz},\ \varointctrclockwise \tag{B.1}$$

centered picture:



Various attempts to make tensor duals:

$$R_i{}^j{}_{k\ell} \quad \overset{*}{R}_i{}^j{}_{k\ell} \quad \overset{**}{R}_i{}^j{}_{k\ell} \quad \overset{*}{R}_i{}^j{}_{k\ell}$$

big, Big, bigg, Bigg scriptstyle scriptscriptstyle displaystyle can control sizes in math mode. bigl, Bigl, biggl, Biggl (and bigr etc.) are useful replacements for left and right (these sized by hand – not auto – and do not require left-right balancing).

Bverbatimstar (but there are no `Everbatim`, `Everbatimstar`)

```
first␣␣␣␣␣(a␣b)
second␣␣␣␣(c␣d)
```

`\verb+: ^*&(#@!\)#` (the + acts as a delimiter, any char may be used as delim... `\verb*` does ␣ characters for spaces). The `alltt` environment (like `verbatim` but with `\{}` having their usual meanings – permits font changes and math with considerable difficulty since the long escape seqs needed, but staying const-width) is also worth considering. Simpler are

{\ *obeylines* stuff} (refuses

to move stuff between lines)

and

{\ *obeyspaces* stuff}

(refuses   to move   stuff horizontally [but clobbers indents!].)

Centered tabular with shortstack and cline's:

	Davis	**Hendry**	Parrott	Who
Steve Davis	×	**23**	19	0
Thomas Hendry	34	×	0	4
John Parrott	22	**0**	×	18
Jimmy Who	0	**10**	11	×

Figure B.1. Here is a Bcaption, MyCaptionCtr is incremented.

Btabbing:

Type	Quality	Color	Price
Paper	med.	white	high
Leather	good	red	med.

ball, sphere, simpvol, simpsurf, octvol, octsurf, squarevol, squaresurf, cube:

$$\bullet_n\ \circ_n\ \blacktriangle_n\ \triangle_n\ \blacklozenge_n\ \lozenge_n\ \blacksquare_n\ \square_n\ ❑_n$$

Here are ding61, ding164 and ding246: ✝ ❤ ➶. And... Here are some ZapfDingbats in math mode.

circphone	✆
plainphone	☎
scissors	✄
blender	✇
airplane	✈
envelope	✉
pointfinger	☞
writinghand	✍
pencil	✎
xcross	✖
zapfcross	✚
crossprism	✟
maltesecross	✠
jewstar	✡
darkhypsquare	$❖_n$
hypsquareoutline	✧
darkpentstar	$★_n$
pentstaroutline	✩
starprism	✰
darkhexstar	✶
snowflake	❄
zapfball	$●_n$
cube	$❑_n$
darksemicircle	◗
darkrectangle	❚
bigleftquote	❛
bigleftdblquote	❝
bigrightquote	❜
bigrightdblquote	❞
fruit	❂
darkheart	♥
motionarrow	➠
fatarrow	➧
arrowprism	➩
exxagarrow	➽

Figure B.2. Another Bcaption.

References

[1] P.M.Ancient: *Bogus book*, McGraw-Hill 1943. `http://www.bogus.edu/~potato`.

[2] J.Q.Patriot: Jingoistic Title, *Journal Name* 14 (1772) 43-56.

[knu] D.E.Knuth: foo, 55-58 in *Dogshit*, (ed. J.Q.Dog) Viking 1976.

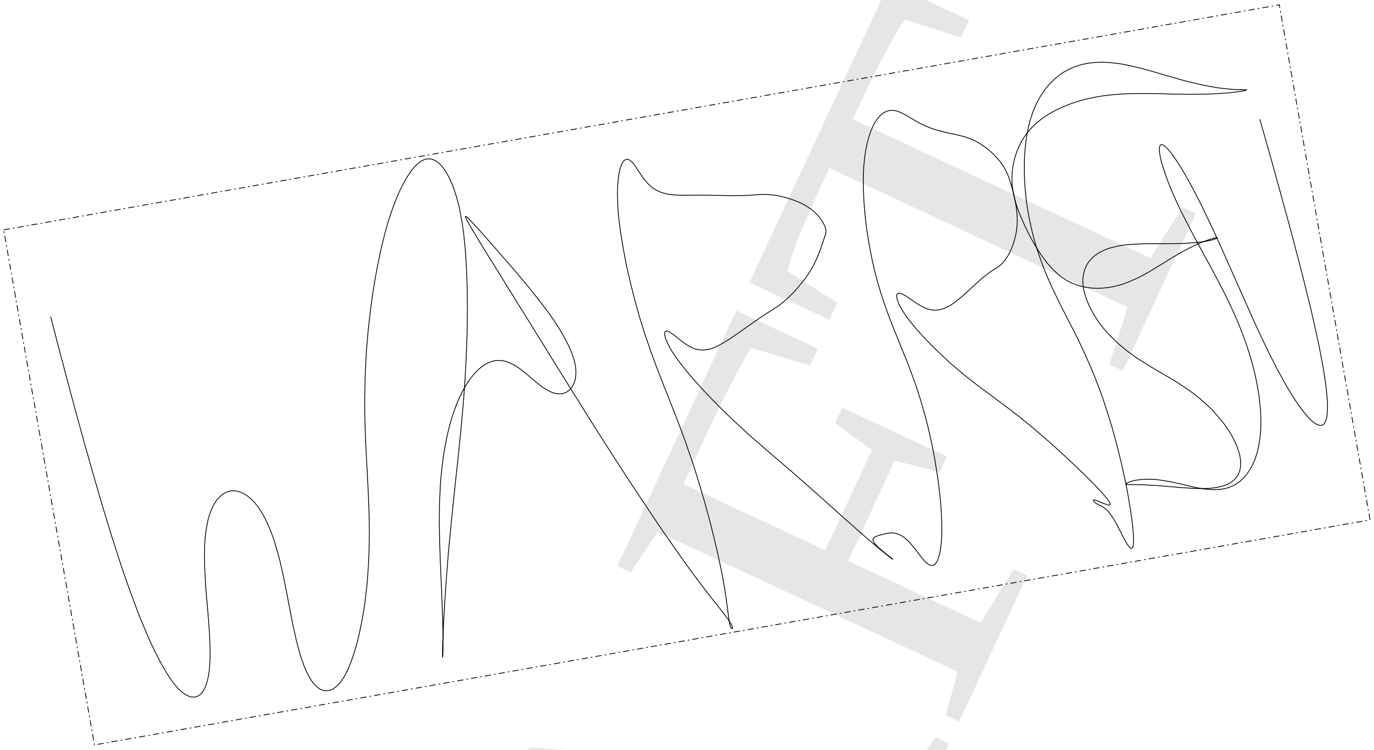
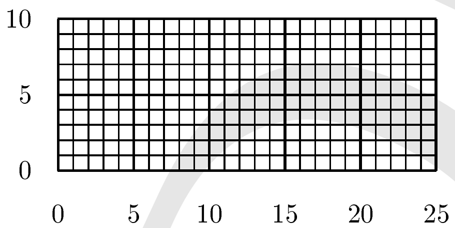


Figure B.5. This is the caption of a 10°-rotated 0.65-scaled unclipped figure.

C And now for some doublespaced stuff; this is a page-wide heading here

There has been a movement afoot[1] among journal editor scum to try to kill trees[2] by forcing you to doublespace everything. They are dogs. This makes it hard to read not easier[3]. Their journals suck. May they all rot in[4] hell forever. They deserve to be shot.

Back to single spacing.
Here is some 2mm graphpaper:



produced with the graphpap package in the picture environment.

Here are the endnotes, set in 2 columns.

Notes

[1]Endnote #1.

[2]Endnote #2.

[3]Endnote #3 with some very long bullshit text as part of it going on and on forever yawn yawn yawn.

[4]Endnote #4, the last one.

End of endnotes.

symbol	you get
oint	$\oint_a^b f(z)\mathrm{d}z$ do not have arrow oint
mod md,mymod= $\boxed{\text{bmod}}$ pmod	$x \equiv y + z \mod n$ $\boxed{x \equiv y + z \bmod n}$ $x \equiv y + z \pmod{n}$
abs norm mean floor ceil bra ket	$\lvert x\rvert$ $\lVert x\rVert_2$ $\langle x\rangle$ $\lfloor x\rfloor$ $\lceil x\rceil$ $\langle x\rvert$ $\lvert x\rangle$
text	$a^{\text{Gauss}}_{\text{Klein}}$ (since $a = b$).
iiint, Vec	$\iiint_G a\mathrm{d}^3\vec{x}$
substack	$\sum_{\substack{k\geq 0\\ j\leq k}} a_{kj}$
sideset	$\sideset{_a^b}{_c^d}\prod$
overset	$\overset{*}{X}$
underset	$\underset{*}{X}$
overrightarrow underrightarrow	$\overrightarrow{ABCD}$ $\underrightarrow{ABCD}$
xleftarrow	$a \xleftarrow[d]{u} b$
xrightarrow	$a \xrightarrow[d]{u} b$
Hat Tilde Dot Ddot dot ddot dddot ddddot vardddot varddddot	$\hat{\hat{A}}$ $\tilde{A}$ $\dot{A}$ $\ddot{A}$ $\dot{A}$ $\ddot{A}$ $\dddot{A}$ $\ddddot{A}$ $\dot{\ddot{A}}$ $\ddot{\ddot{A}}$
Hat Tilde Dot Ddot dot ddot dddot ddddot vardddot varddddot	$\hat{u}$ $\tilde{u}$ $\dot{u}$ $\ddot{u}$ $\dot{u}$ $\ddot{u}$ $\dddot{u}$ $\ddddot{u}$ $\dot{\ddot{u}}$ $\ddot{\ddot{u}}$
binom lacute Check mathring	$\binom{t}{b}$ $<x>$ $\check{a}$ $\mathring{a}$
,	$x\,x$ small
:	$x\:x$ medium
;	$x\;x$ thick
quad	$x\quad x$ thicker
qquad	$x\qquad x$ thickest
!	$x\!x$ negative
mathbb	$\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$ uppercase only
mathscr	$\mathscr{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$ uppercase
mathcal	$\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$ uppercase
mathtt	$\mathtt{ABCDEFGabcdefg}$
mathrm	$\mathrm{Fe_2^{2+}Cr_2O_4}$
chem	$\mathrm{Fe_2^{2+}Cr_2O_4}$
mathsf	$\mathsf{M\,D\,I}$ sans serif for matrices
overline underline overleftarrow	$\overline{ab}$ $\underline{cd}$ $\overleftarrow{cd}$
overbrace	$\overbrace{a+\underbrace{b+c}_{\text{2 terms}}+d}^{\text{4 terms}}$
atop brack angchoose choose	${a \atop b}$ $\genfrac{[}{]}{0pt}{}{a}{b}$ $\genfrac{\langle}{\rangle}{0pt}{}{a}{b}$ $\binom{a}{b}$
defeq (done with stackrel{def}{=})	$a \stackrel{\text{def}}{=} b$
{} to control super	$R_i{}^j{}_{k\ell}$
partial, #	$\partial x \qquad \#\{x \mid f(x) = q\}$
epsilon varepsilon eta theta vartheta eta nu	$\epsilon\ \varepsilon\ \eta\ \theta\ \vartheta\ \eta\ \nu$
xi chi rho varrho upsilon phi varphi	$\xi\ \chi\ \rho\ \varrho\ \upsilon\ \phi\ \varphi$
pm mp in propto	$x \pm y$ $x \mp y$ $x \in y$ $x \propto y$
leftarrow=gets rightarrow=to swap nto ngets leadsto	$a \leftarrow b$ $a \rightarrow b$ $a \leftrightarrow b$ $a \nrightarrow b$ $a \nleftarrow b$ $a \leadsto b$
perp parallel notin	$a \perp b$ $a \parallel b$ $a \notin b$
mapsto le ne cong notcong	$a \mapsto b$ $a \leq b$ $a \neq b$ $a \equiv b$ $a \not\equiv b$
Longleftarrow	$a \Longleftarrow b$
Longleftrightarrow=iff	$a \Longleftrightarrow b$
Longrightarrow=implies	$a \Longrightarrow b$
rightleftharpoons	$a \rightleftharpoons b$
nearrow searrow	$a \nearrow b$ $a \searrow b$
ll gg lll ggg lwig gwig lnsim gnsim	$a \ll b$ $a \gg b$ $a \lll b$ $a \ggg b$ $a \lesssim b$ $a \gtrsim b$ $a \lnsim b$ $a \gnsim b$
succ succe prec prece	$a \succ b$ $a \succcurlyeq b$ $a \prec b$ $a \preccurlyeq b$
div times	$a \div b$ $a \times b$

Figure B.3. This is the caption of the table.

symbol	you get
half onethird	$A\frac{1}{2}B\frac{1}{3}C\frac{2}{3}D\frac{1}{4}E\frac{3}{4}F$ $a\frac{1}{2}b\frac{1}{3}c\frac{2}{3}d\frac{1}{4}e\frac{3}{4}f$
dagger ddagger	$a \dagger b$ $a \ddagger b$
pluseq minuseq timeseq diveq slasheq stareq upeq	$a += b$ $a -= b$ $a \times= b$ $a \div= b$ $a /= b$ $a *= b$ $a \uparrow= b$
quoteeq xoreq landeq loreq :=	a “=” b $a \oplus= b$ $a \wedge= b$ $a \vee= b$ $a := b$
colons	$a : b :: c : d : e :: f$
plusplus {\bf ;}	a++; a−−⨾ a−−; a++**;**
frown smile smallfrown smallsmile twogets twoto	$a \frown b$ $a \smile b$ $a \smallfrown b$ $a \smallsmile b$ $a \twoheadleftarrow b$ $a \twoheadrightarrow b$
maltese checkmark yen pitchfork	$\maltese$ $\checkmark$ $\yen$ $\pitchfork$
cdot ast star bigstar ∗	$a \cdot b$ $a \ast b$ $a \star b$ $a \bigstar b$ $a * b$
odot oplus otimes ominus oslash	$a \odot b$ $a \oplus b$ $a \otimes b$ $a \ominus b$ $a \oslash b$
obslash olessthan obar circledast circledcirc circleddash	$a \obslash b$ $a \olessthan b$ $a \obar b$ $a \circledast b$ $a \circledcirc b$ $a \circleddash b$
varodot varoplus varotimes varominus varoslash varocircle	$\varodot$ $\varoplus$ $\varotimes$ $\varominus$ $\varoslash$ $\varocircle$
varoast varovee varowedge varobslash varolessthan varobar	$\varoast$ $\varovee$ $\varowedge$ $\varobslash$ $\varolessthan$ $\varobar$
boxdot boxplus boxtimes boxminus	$a \boxdot b$ $a \boxplus b$ $a \boxtimes b$ $a \boxminus b$
boxslash boxbslash boxbox boxcircle boxbar boxempty boxast	$a \boxslash b$ $a \boxbslash b$ $a \boxbox b$ $a \boxcircle b$ $a \boxbar b$ $a \boxempty b$ $a \boxast b$
divideontimes	$a \divideontimes b$
oblong talloblong baro	$a \oblong b$ $a \talloblong b$ $\baro$
diamond Diamond	$a \diamond_6 b$ $a \Diamond_6 b$
triangle bigtriangleup Box	$\triangle_4$ $\bigtriangleup_4$ $\Box_3$
vartriangle square lozenge	$\vartriangle_d$ $\square_4$ $\lozenge_5$
circ bullet bigcirc	$\circ$ $\bullet$ $\bigcirc$
Large{bullet} huge{bullet} Huge{bullet}	$\bullet_2$ $\bullet_3$ $\bullet_4$ Large defunct in mathmode
blacktriangle blacksquare blacklozenge	$\blacktriangle_3$ $\blacksquare_5$ $\blacklozenge_6$
approx asympt nasympt	$a \approx b$ $a \sim b$ $a \nsim b$
clubsuit heartsuit spadesuit	$\clubsuit$ $\heartsuit$ ♠
neg=lnot land lor xor	$\neg a$ $\neg a$ $a \vee b$ $a \wedge b$ $a \oplus b$
angstrom (& text) aleph infty	Å Å $\aleph$ ∞
dots	$a \ldots b$ $a + \cdots + b$ $a, \ldots, b$
wp	$\wp(x)$ Weierstrass elliptic fn
imath prime jmath ell	$\imath$ $A\prime$ A' $\vec{\jmath}$ ℓ
hbar hslash mho Omega	$\hbar$ $\hslash$ $\mho$ Ω
backslash angle forall exists nexists	$\backslash$ $\angle$ $\forall$ $\exists$ $\nexists$
widetilde widehat	$\widetilde{ab}$ $\widehat{ab}$
divides ndivides	$a \mid b$ $a \nmid c$
bigC	$\mathbb{C}$ $\mathbb{Z}$ $\mathbb{R}$ $\mathbb{Q}$ $\mathbb{N}$
bfC	**C Z R Q N**
measuredangle sphericalangle	$\measuredangle$ $\sphericalangle$
emptyset nabla urcorner lrcorner	$\emptyset$ ∇ $\urcorner$ $\lrcorner$
dashleftarrow leftrightsquigarrow	$a \dashleftarrow b$ $a \leftrightsquigarrow b$
nLeftarrow nRightarrow fatsemi	$a \nLeftarrow b$ $a \nRightarrow b$ $a \fatsemi b$
Yup Yleft Yright Ydown	$\Yup$ $\Yleft$ $\Yright$ $\Ydown$
oiint ocircle phone clock varangle wasylozenge	$\oiint$ ○ ϒ ø ∢ ⌑ PHONE & CLOCK FAIL! LaTeXBUG!
lightning pointer smiley frownie kreuz	↯ Ψ ☺ ☹ ✠ POINTER FAILS!!
male female photon gluon	♂ ♀
permil CheckedBox hexagon pentagon hexstar davidsstar	‰ ☑ ⬡ ⬠ ✶ ✡
twonotes leftturn CIRCLE Circle	♫ ↺ ●$_n$ ○$_n$
leftmoon rightmoon astrosun	☾ ☽ ☉
APLinv APLlog APLstar	⌹ ⍟ ⋆
APLbox APLuparrowbox APLdownarrowbox	⎕ ⍐ ⍗
circlearrowleft textcircled{q} textsuperscript	↺ ⓠ a$^{\text{stuff}}$
sqrt* dbland dblor ampersand	$\sqrt[3]{2}$ $a \&\& b$ $a \mid b$ $a \parallel b$ $a \& b$
exclamdown questdown	a¡b c¿d
sqsubset sqsupset lhd unlhd rhd unrhd	$\sqsubset$ $\sqsupset$ $\lhd$ $\unlhd$ $\rhd$ $\unrhd$
sqrt vs usqrt	$\sqrt{a}+\sqrt{b}+\sqrt{q}$ $\sqrt{a}+\sqrt{b}+\sqrt{q}$
textexclamdown textquestiondown textquotedblleft textvisiblespace	¡x ¿a “b ”c ␣
French quote marks do not work ¡¡ a ¿¿	?

Figure B.4. This is the caption of the next table.