

The power of D. E. Knuth's \TeX has made typesetting of the highest quality available to the ordinary computer user, PC or otherwise. The one drawback is that the actual printing of a document can be slow. In most cases one makes many versions before the final one: it would be handy to be able to **see** the \TeX output quickly, even in a rough form. That is the purpose of **CDVI**. If one has an IBM PC (or compatible) with a graphics screen (Hercules, CGA, EGA, VGA, MCGA or Olivetti/ATT) and the DVI file, then CDVI gives a screen image in seconds. CDVIO is for Olivetti/ATT 640-400 graphics, CDVI-2 is for VGA or MCGA graphics; the other are named according to the type of graphics. The restrictions are that only the Plain \TeX fonts may be used and that the page dimensions are not too big.

The basic problem in writing a program to screen \TeX is that the number of dots in Hercules graphics (720 by 348) is about 1/10 that of an ordinary sheet of paper with a not too fancy printer, while the CGA (640 by 200) has about 1/20 the resolution. This limitation in resolution can be overcome to some extent by vertical scrolling. In principle, horizontal scrolling could reduce the limitation even more; but in practice, legibility is considerably reduced. Nevertheless, it is possible to get about 6 inches of \TeX at 10 points in the 640 horizontal dots of CGA graphics with reasonable legibility. This lacks the elegance of \TeX as produced on a 300 pixel per inch device, but a first draft need not be quite so refined.

These versions of **CDVI** incorporate 16 fonts into the program: *one only needs the program and the DVI file*. The fonts occupy about 40 kb. They were made by Metafont from the CM.MF files. Best results will be obtained with versions of \TeX which use the CM fonts. For generality, the program also accepts DVI files calling for AM fonts, with in many cases satisfactory results.

The versions of CDVI up to and including version 1.2 may be copied and passed on to others. CDVI 2.0 has more fonts and horizontal scrolling, as well as greater speed and convenience. Most important, however, CDVI 2.0 implements fast and sophisticated font substitution which allows a very broad range of fonts to be represented without requiring megabytes of disk space. Though it is not free, CDVI 2.0 is available at a reasonable price.

The restriction to Plain \TeX fonts for the versions up to 1.2 is severe, but there is something to be said for a certain amount of discipline among those who use \TeX . Not only does \TeX provide an excellent means for arranging technical text on paper, but has the potential to be the best means of rapid communication of technical ideas and expressions. The proliferation of fonts hinders this second goal. Commercial interests are already trying to impose their fonts on \TeX . There is no need that the beauty of \TeX should interfere with its affinity for rapid communication, provided that a system of standards is accepted. The individual could choose any available fonts for hardcopy output, but for communication by electronic means he should also present a version using a standard set of fonts at specified magnifications. A database of standard DVI files would be accessible to the user of a modest PC. A file could be seen in seconds and printed in minutes.

Press the Rtn key.

TEX FONTS AVAILABLE IN CDVI

1. cmr10

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032	~!~#\$%&'	()*+,-./	01234567	89::;=¿?	
064	@ABCDEFGHI	JKLMNOP	QRSTUVW	XYZ[“^`	
096	‘abcdefg	hijklmno	pqrstuvw	xyz——”~^	

2. cmr7

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3. cmr5

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4. cmsl10

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064	@ABCDEFGHI	JKLMNOP	QRSTUVW	XYZ[\"^_	
096	'abcdefg	hijklmno	pqrstuvw	xyz—“~”	

5. cmtt10

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064	@ABCDEFGH	IJKLMNOP	PQRSTUVWXYZ	xyz[\]^_`
096	'abcdefgh	hijklmno	pqrstuvw	xyz{ }~`

6. cmmi10

000 $\Gamma\Delta\Theta\Lambda\Xi\Pi\Sigma\Upsilon$ $\Phi\Psi\Omega\alpha\beta\gamma\delta\epsilon$ $\zeta\eta\theta\iota\kappa\lambda\mu\nu$ $\xi\pi\rho\sigma\tau\upsilon\phi\chi$
032 $\psi\omega\varepsilon\vartheta\varpi\rho\varsigma\varphi$ $\leftarrow\leftarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow$ 01234567 89.,</>★
064 $\partial ABCDEFG$ $HIJKLMNO$ $PQRSTUVWXYZ$ $XYZb\sharp\sim\smile$
096 $labcdefg$ $hijklmno$ $pqrstuvwxyz$ $xyzij\wp\rightarrow\sim$

7. cmmi7

000 $\Gamma\Delta\Theta\Lambda\Xi\Pi\Sigma\Upsilon$ $\Phi\Psi\Omega\alpha\beta\gamma\delta\epsilon$ $\zeta\eta\theta\iota\kappa\lambda\mu\nu$ $\xi\pi\rho\sigma\tau\upsilon\phi\chi$
032 $\psi\omega\varepsilon\vartheta\varpi\rho\varsigma\varphi$ $\leftarrow\leftarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow$ 01234567 89.,</>★
064 $\partial ABCDEFG$ $HIJKLMNO$ $PQRSTUVWXYZ$ $XYZb\sharp\sim\smile$
096 $labcdefg$ $hijklmno$ $pqrstuvwxyz$ $xyzij\wp\rightarrow\sim$

8. cmmi5

000 $\Gamma\Delta\Theta\Lambda\Xi\Pi\Sigma\Upsilon$ $\Phi\Psi\Omega\alpha\beta\gamma\delta\epsilon$ $\zeta\eta\theta\iota\kappa\lambda\mu\nu$ $\xi\pi\rho\sigma\tau\upsilon\phi\chi$
032 $\psi\omega\varepsilon\vartheta\varpi\rho\varsigma\varphi$ $\leftarrow\leftarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow\rightarrow$ 01234567 89.,</>★
064 $\partial ABCDEFG$ $HIJKLMNO$ $PQRSTUVWXYZ$ $XYZb\sharp\sim\smile$
096 $labcdefg$ $hijklmno$ $pqrstuvwxyz$ $xyzij\wp\rightarrow\sim$

9. cmsy10

000 $- \cdot \times * \div \diamond \pm \mp$ $\oplus \otimes \oslash \odot \bigcirc \bullet$ $\asymp \equiv \subseteq \supset \leq \geq \preceq \succeq$ $\sim \approx \subset \supset \ll \gg \prec \succ$
032 $\leftrightarrow \rightarrow \uparrow \downarrow \leftrightarrow \nearrow \searrow \simeq$ $\Leftrightarrow \Uparrow \Downarrow \Leftrightarrow \nearrow \swarrow \alpha$ $\infty \in \ni \Delta \nabla \int \forall \exists - \emptyset \Re \Im \top \perp$
064 $\aleph ABCDEFG$ $\mathcal{H I J K L M N O}$ $P Q R S T U V W$ $\mathcal{X Y Z}$ $\cup \cap \emptyset \Delta \nabla$
096 $\vdash \sqcup \sqcap \{ \}$ $\langle \rangle \parallel \nabla \nabla \setminus \wr$ $\sqrt{\Pi \nabla \int \cup \cap \subseteq \supseteq}$ $\S \P \clubsuit \diamond \heartsuit \spadesuit$

10. cmsy7

000 $- \cdot \times * \div \diamond \pm \mp$ $\oplus \otimes \oslash \odot \bigcirc \bullet$ $\asymp \equiv \subseteq \supset \leq \geq \preceq \succeq$ $\sim \approx \subset \supset \ll \gg \prec \succ$
032 $\leftrightarrow \rightarrow \uparrow \downarrow \leftrightarrow \nearrow \searrow \simeq$ $\Leftrightarrow \Uparrow \Downarrow \Leftrightarrow \nearrow \swarrow \alpha$ $\infty \in \ni \Delta \nabla \int \forall \exists - \emptyset \Re \Im \top \perp$
064 $\aleph ABCDEFG$ $\mathcal{H I J K L M N O}$ $P Q R S T U V W$ $\mathcal{X Y Z}$ $\cup \cap \emptyset \Delta \nabla$
096 $\vdash \sqcup \sqcap \{ \}$ $\langle \rangle \parallel \nabla \nabla \setminus \wr$ $\sqrt{\Pi \nabla \int \cup \cap \subseteq \supseteq}$ $\S \P \clubsuit \diamond \heartsuit \spadesuit$

11. cmsy5

000 $- \cdot \times * \div \diamond \pm \mp$ $\oplus \otimes \oslash \odot \bigcirc \bullet$ $\asymp \equiv \subseteq \supset \leq \geq \preceq \succeq$ $\sim \approx \subset \supset \ll \gg \prec \succ$
032 $\leftrightarrow \rightarrow \uparrow \downarrow \leftrightarrow \nearrow \searrow \simeq$ $\Leftrightarrow \Uparrow \Downarrow \Leftrightarrow \nearrow \swarrow \alpha$ $\infty \in \ni \Delta \nabla \int \forall \exists - \emptyset \Re \Im \top \perp$
064 $\aleph ABCDEFG$ $\mathcal{H I J K L M N O}$ $P Q R S T U V W$ $\mathcal{X Y Z}$ $\cup \cap \emptyset \Delta \nabla$
096 $\vdash \sqcup \sqcap \{ \}$ $\langle \rangle \parallel \nabla \nabla \setminus \wr$ $\sqrt{\Pi \nabla \int \cup \cap \subseteq \supseteq}$ $\S \P \clubsuit \diamond \heartsuit \spadesuit$

12. cmbx10

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032	-!"#\$%&'	()*+,-./	01234567	89::j=¿?
064	@ABCDEFGH	IJKLMNOP	PQRSTUVWXYZ	XYZ["]~`
096	'abcdefgh	ijklmno	pqrstuvw	xyz—“”

13. cmbx7

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032	!~"#\$%&'	()*+,-./	01234567	89::; =¿?
064	@ABCDEFGHI	JKLMNOP	QRSTUVWXYZ	XYZ["^_`
096	`abcdefg	hijklmno	pqrstuvw	xyz—~^^

14. cmbx5

000	ΓΔΕΛΞΠΣΥ	ΦΨΩηθκρστυφ	ι j , ~ ~ ~ ~	β βααααααααααα
032	!"#\$%&'	()*+,-./	01234567	89:; =¿
064	@ABCDEFGHI	JKLMNOP	QRSTUVWXYZ	XYZ["]`^
096	‘abcdefg	hijklmno	pqrstuvw	xyz—“”

15. cmti10

000	$\Gamma\Delta\Theta\Lambda\Pi\Sigma\Upsilon$	$\Phi\Psi\Omega\Upsilon\Upsilon\Upsilon\Upsilon\Upsilon\Upsilon\Upsilon$	$\eta^{\sim}\cdot\cdot\cdot\cdot^{\circ}$	$\beta\alpha\epsilon\theta\mathbb{A}E\mathcal{O}$
032	'!"#\$%&'	()*+,-./	01234567	89::j=_?
064	@ABCDEFGF	H I J K L M N O	P Q R S T U V W	X Y Z[" ^`
096	`abcdefg	hijklmno	pqrstuvw	xyz—~"

16. cmex10

[illegible]

