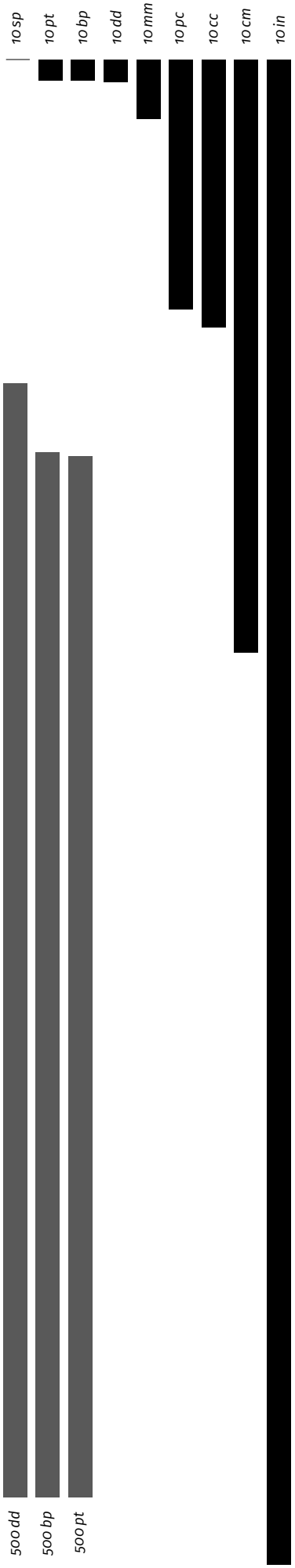
Length units in TEX

The given conversions may suffer form rounding errors and are only for guidance.
The shown rules are 1 mm thick. Please note that the very short rules may not be rendered correctly on your screen (or printer) and appear longer than they are.



Absolute Units

Scaled Point

Definition
The scaled point is defined as 1/65 536 points.

Note
This is the smallest unit TEX uses.

Conversion
1 sp = 0 mm = 0.000 02 pt

(PostScript-)Point

Definition
The point is defined as 1/72.27 inch.

Conversion
1 pt = 0.351 46 mm = 65 536 sp

Big Point (DTP point)

Definition
The big point is defined as 1/72 Inch.

Note
Word, InDesign and other DTP applications use this definition for points.

Conversion
1 bp = 0.352 77 mm = 1.003 74 pt = 65 781 sp

Didot Point

Definition
An old unit used by European printers

Conversion
1 dd = 0.376 07 mm = 1.07 pt = 70 124 sp

Millimeter

Definition
SI unit

Conversion
1 mm = 2.845 26 pt = 186 467 sp

Pica

Definition
One pica equals twelve points.

Conversion
1 pc = 4.217 54 mm = 12 pt = 786 432 sp

Cicero

Definition
One Cicero equals twelve Didot points.

Conversion
1 cc = 4.5128 mm = 12.8401 pt = 841 489 sp

Centimeter

Definition
SI unit

Conversion
1 cm = 10.000 05 mm = 28.452 74 pt = 1 864 679 sp

Inch

Definition
One inch equals 2.54 centimeters.

Conversion
1 in = 25.400 13 mm = 72.269 99 pt = 4 736 286 sp

Relative Units

These units depend on the currently active font size.
For more details about em and ex see: http://tex.stackexchange.com/q/4239/4918

Em

Definition
Traditionally, an em was defined as the width of a capital M or to be equal to the font size, but today the actual value is defined in the font file.

Note
This unit should be used for all horizontal distances that should change relative to the font size; the paragraph indention for instance.

Ex (x Height)

Definition
Traditionally, an ex was defined as the height of a lower case x, but today the actual value is defined in the font file.

Note
This unit should be used for all vertical distances that should change relative to the font size.

Math Unit

Definition
This unit equals approx 1/18 em of the math font family.

Note
It can only be used for spacing in math mode.