Variable And Function Names

Variable and function names can be of any length and can contain a variety of characters. There are, however, some restrictions. Variable and function names can consist of:

- All upper and lowercase Roman letters. Names are case sensitive.
- The digits 0 through 9, but not as the first character of a name. Mathcad interprets leading digits in combination with letters as either an imaginary number (2*i* or 3*j*), a binary, octal, or hexadecimal number (for example, 5o, 7Fh), or as a number times a variable (3x).
- The prime symbol **' [Ctrl] [F7]**, the percent symbol **%** and underscore _.
- Greek letters, which can be typed by using the Roman character followed by **[Ctrl] G**.
- Literal Subscripts and Namespace subscripts (as opposed to array subscripts).
- The infinity symbol, **[Ctrl] [Shift] Z**. By itself, this symbol is a built-in constant.

Restrictions

- All characters in a name must be in the same font, have the same point size, and be in the same style (italic, bold, and so on). Greek letters can appear in any function name. Mathcad is able to distinguish between the same name in different math styles.
- Variable names and function names are not distinguishable. Thus, if you define $f(x)$, and later you define the variable f, you will find that you cannot use $f(x)$ anywhere below the definition for f.
- Certain names are already used for built-in constants, units, and functions. Although you can redefine these names, keep in mind that their built-in meanings will no longer exist after the redefinition. For example, if you define a variable called $mean$, the built-in function $mean(v)$ can no longer be used. If you have warnings turned on, redefinitions are flagged.
- Names cannot begin with a minus sign (-), which always refers to the negation operator.
- The first period that you add to a name always refers to the literal subscript operator. You can then use additional periods in the literal subscript. For example,

  $a_{b.c.d}$

Operator Symbols In Names

If you want a variable name to contain an operator symbol and its associated placeholders, such as the factorial or integral symbol, you must use a special mode, most often used for chemistry notation.

1. Press **[Ctrl] [Shift] J** to insert a pair of brackets with a placeholder between them.
2. Type whatever letters, numbers, and operators are in the name.

For example,

$$\left[\frac{d^2}{d\,n^2}\,n\right] := 3$$

$$\left[H_2\,O\right] := 24.5$$

Typing Reserved Keystrokes And Special Symbols In A Name

Some characters, such as **$**, are used to create operators and so can't be typed directly into a variable or function name. Other symbols require a sequence of character strokes, such as **[Alt]0176** for the degree symbol °. Use "text in math" mode to type the actual symbol, instead of the operator, inside a variable or function name such as K$ or x@3:00.

1. Type a letter or number to begin the name.
2. Type **[Ctrl] [Shift] K** to enter a special "text" mode. The editing lines turn red to indicate you are in the special text mode.
3. Type one or more symbols.
4. Type **[Ctrl] [Shift] K** again to return to regular math editing mode.

Another way to get special symbols is to copy them from another Mathcad document, where the above steps have already been done. There is a QuickSheet that contains many useful symbols. To copy these symbols,

1. Open QuickSheets from the **Help** menu.
2. Click on "Math Symbols."
3. Select the math symbol you want, move the cursor over the edge of the region until it becomes a hand, and drag the region to your worksheet.

You can also paste a symbol from another application. If you know the ASCII code, you can hold down the **[Alt]** key while typing the ASCII code using the numeric keypad. You can find codes for special symbols by choosing **Character Map** from **System Tools** in **Accessories** under the **Program** files in your **Start** menu.

Notes:

- Mathcad distinguishes between uppercase and lowercase letters. For example, *diam* is a different variable from *DIAM*. Mathcad also distinguishes between names in different fonts. Thus *Diam* is also a different variable from ***Diam***.
- Special characters particularly useful in Mathcad are available in the Custom Characters Toolbar and on the Greek Characters Toolbar.

Related Topics