

FX Equation V3 Reference Card

Symbol Replacements

< =	<
> =	>
< > or = /	≠
= ~ or ~ =	≡
~ ~	≈
- =	≡
+ -	±
*	*, × or ·
/ (followed by a space)	÷
` or o	°
- >	→
= >	⇒
inf	∞
tri	Δ
ang	∠
perp	⊥
and	∩
or	∪
element	∈
notelement	∉
subset	⊂
notsubset	⊄
prosubset	⊆
prop	∝
tf	∴

Greek Letters

Use the first two letters of the name of the letter.

al	α
be	β
ch	χ
de	δ
DE	Δ
ph	φ
ga	γ
la	λ
mu	μ
pi	π
th	θ
rh	ρ
si	σ
SI	Σ
om	ω
OM	Ω

Square Roots

sqrt or sr may be used to generate square roots. Brackets may be used for complicated square roots.

sr 3	$\sqrt{3}$
sr(x ² + y ²)	$\sqrt{x^2 + y^2}$

nth Roots

The root function is used to create any root of an equation.

4root x	$\sqrt[4]{x}$
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Brackets

Some brackets need to be entered for logical reasons but will not be displayed. See fractions.

Fractions

Fractions are entered using the / key. Complex numerators or denominators must be surrounded with brackets.

pi/6	$\frac{\pi}{6}$
(3x+2)/4	$\frac{3x+2}{4}$

Integrals

int(-3,pi)x ² dx	$\int_{-3}^{\pi} x^2 dx$
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Limits

lim(x->0) sinx/x	$\lim_{x \rightarrow 0} \frac{\sin x}{x}$
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Sigma and Product Notation

sigma(i = 1, 10) x _i	$\sum_{i=1}^{10} x_i$
product(i = 1, 10) x _i	$\prod_{i=1}^{10} x_i$

Scientific Notation

Enter scientific notation using capital E

3.2E12	3.2×10^{12}
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Vectors

Column Vectors are entered by separating each row with a ,

(3,2,2,-5)	$\begin{pmatrix} 3 \\ 2 \\ 2 \\ -5 \end{pmatrix}$
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Matrices

Matrices are entered column by column. Matrices can have a maximum of three rows.

[3,2,1 4,1,-a]	$\begin{bmatrix} 3 & 4 \\ 2 & 1 \\ 1 & -a \end{bmatrix}$
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Formatting Characters

[^] power

The power symbol is used to force an expression to be a power when FX Equation does not automatically recognise it.

x ^y	x^y
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\ (or \$) subscript

Used to show that the next character is a subscript. Subscripts can be surrounded in brackets.

T\ (n+1)	T_{n+1}
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— bar

Used to show that the preceding character has a bar above it. Used for means, recurring decimals and complementation.

x _—	\bar{x}
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^^ hat

Used to show that the preceding character has a hat above it. Used in statistics.

y^^	\hat{y}
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: dot(s)

Used to show that the preceding character has a dot (or two dots) above it. Used in calculus and recurring decimals.

y:	\dot{y}
x::	\ddot{x}

" " quotes

Surrounding an equation or part of an equation in quotes will prevent FX Equation from formatting that section. This allows you to add text to an equation.

x = 7 "and" y = 4

x = 7 and y = 4

Shortcuts

The following shortcuts are predefined in FX Equation 3.
You can add your own.

qf

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Degrees

32` 32°

32o 32°

Mixed Numerals

If you have the "Shrink Non-algebraic Fractions" option on, entering mixed numerals is easy - just put a space between the whole number and the numerator.

3 1/3 + 2 1/2 = 5 5/6

$$3\frac{1}{3} + 2\frac{1}{2} = 5\frac{5}{6}$$

Recurring Decimals

3.1: 3.1̇

3.234_ 3.234̄

6.874_1234 6.8741234̄

Absolute Values

Absolute values are entered using the | key (on some keyboards this is printed as two vertical dashes, one on top of the other). Absolute value signs are difficult for FX Equation because they have no "direction". Unlike other brackets, you can not easily tell if | is opening a new absolute value or closing an existing one. IF FX Equation interprets your absolute value incorrectly, you can use this code:

|[opens an absolute value
]| closes an absolute value

The square bracket will not be displayed - it is only used to indicate the direction of the absolute value sign.

Greatest Integer

[| x2 |] ⌊x²⌋

Definite Integral Bounds

int(1,2) x2 dx = [x3/3]1,2

$$\int_1^2 x^2 dx = \left[\frac{x^3}{3} \right]_1^2$$

Multiline Equations

Up to twenty lines of equations can be entered. Use the up and down arrows to move between the lines.

Internationalisation

FX Equation automatically detects which character you use for a decimal point. In locations that use , as a decimal point, you should use ; to separate rows of columns and vectors.

Keyboards in some countries do not have a \ key. If your keyboard does not have a \ key, use the § key to enter subscripts.