



## Keyboard shortcuts - Macintosh

You can see many of the shortcuts for Graphing Calculator next to the menu commands. Here are a some additional shortcuts.

### Shortcuts for math

Action	Shortcut
Square the selected terms or the symbol to the left of the insertion point	@ (Shift + 2 on some keyboards)
Cube the selected terms or the symbol to the left of the insertion point	# (Shift + 3 on some keyboards)
Negate the selected terms	Control + - (minus)
Delete all	Control + Delete
<b>Moving terms (see <a href="#">Drag Algebra</a>)</b>	
Move the selected items to the left (the same as dragging to the left)	Control + Shift + Left Arrow key
Move the selected items to the right (the same as dragging to the right)	Control + Shift + Right Arrow key
Move the selected items to the left using the commutative law if possible	Control + Left Arrow key
Move the selected items to the right using the commutative law if possible	Control + Right Arrow key
<b>Selection</b>	
Move the insertion point left	Left Arrow key
Move the insertion point right	Right Arrow key
Select the operation containing the current selection	Up Arrow key
Select the first term of the current selection	Down Arrow key
Move the insertion point from the currently selected equation to the one above it	Control + Up Arrow key
Move the insertion point from the currently selected equation to the one	Control + Down Arrow key

below it

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Move to the next item in an equation or to the next "?" (unset parameter) if there is one	Tab
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Move to the previous item in an equation	Shift + Tab
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### Inserting special characters and operators

Absolute value	
Less than	<
Greater than	>
Less than or equal to ( $\leq$ )	Control + <
Greater than or equal to ( $\geq$ )	Control + >
Interval	Control + [
Comma	, ; (semicolon)
Parentheses	[ (
Equal	=
Not equal to ( $\neq$ )	Control + Shift + N
Element of ( $\in$ )	Control + Shift + E
A square root	Control + R
An exponent	^
A Bessel function	Control + J
A binomial coefficient	Control + Shift + K
A function $f(x)$	Control + 9
A cross product	Control + X
A dot product	Control + period
2-vector	Control + 2
3-vector	Control + 3
4-vector	Control + 4
2x2 matrix	Control + Shift + 2
3x3 matrix	Control + Shift + 3
4x4 matrix	Control + Shift + 4
Matrix tranpose	Control + Shift + G

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Prime	' (single quote)
Divergence ( $\nabla \cdot$ )	type div
Gradient ( $\nabla$ )	type grad
Curl ( $\nabla \times$ )	type curl
Laplacian ( $\nabla^2$ )	type lap
Floor ( $\lfloor \rfloor$ )	type floor
Ceiling ( $\lceil \rceil$ )	type ceil
Pi ( $\pi$ )	type pi Option + P
Theta ( $\theta$ )	type theta Option + T
Phi ( $\phi$ )	type phi Option + F
Degree ( $^\circ$ )	type degree Control + G
Infinity ( $\infty$ )	type inf
If	Control + F
A branch for a piecewise-defined function or a new row for the selected vector or matrix	Control + A
A new column for the selected vector or matrix	Control + Tab
Add	+
Multiply	*
Divide	/
Subtract	-
Factorial	!
Ellipsis (...)	Control + ; (semicolon)
Complex Conjugate ( $\bar{\phantom{x}}$ )	_ (underscore)
Extended Product ( $\prod$ )	Control + Shift + P
Vector hat ( $\hat{\phantom{x}}$ )	Control + 6

## Shortcuts for graphs

Action	Shortcut
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Zoom only the $x$ -axis of a 2D graph	Option + click the zoom button
Zoom only the $y$ -axis of a 2D graph	⌘ + click the zoom button
Rotate a 3D graph around the $x$ -axis	⌘ + Option + X
Rotate a 3D graph around the $y$ -axis	⌘ + Option + Y
Rotate a 3D graph around the $z$ -axis	⌘ + Option + Z
Show or hide the axes	⌘ + Option + A
Show or hide the 2D grid background	⌘ + Option + G
Show or hide the 3D room background	⌘ + Option + R
Track on a curve	Control + drag in a 2D graph
Pan the axes	Option + drag in a 2D graph
Change the 3D perspective	Control + drag in a 3D graph
Spin the axes	Drag anywhere in a 3D graph
Constrain the spin around a coordinate axis	Shift + drag anywhere in a 3D graph
Limit the slider animation speed to 30 frames per second (on by default)	⌘ + Control + Option + T
Animate only in the forward direction, rather than back and forth	Option + click the play button
Simple plotting	Control + Shift + 6
Honest plotting	Control + Shift + 7
Best 2D plotting (the default)	Control + Shift + 8
Change 2D vector fields to direction fields (to show direction but not magnitude)	⌘ + Option + Control + D

## Dragging in the graph pane

Key	Effect in 2D Graphs	Effect in 3D Graphs
Command	Drags graph image	(same)
Shift	Zooms the graph by selecting a rectangle	Constrains spin around a coordinate axis
Option	Pans the graph without having to click an axis	Spins the graph
Control	Marks and tracks the first curve without having to click it	Makes the graph appear larger or smaller