

Tracing a graph (Tutorial B4)

http://www.atomiclearning.com/k12/en/movie/33156/play_window?type=Tutorial&sid=1674

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You can trace a graph and see values for the curve, as well as find points of interest such as the minimum, maximum,

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zeroes, and intersections. CAS users can even find inflection points. I'll create a new page by clicking Insert and then

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choosing Graphs & Geometry. I'll enter my function, $x^2 + 6$, by pressing "x" followed by Shift-6 to create the "^" symbol

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to move into the exponent. Next, I'll press "2," and then the right arrow key to move out of the exponent, followed

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by "+6," and then press the Enter key to graph my parabola. To trace the graph, I'll click Trace and choose Graph Trace.

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Now I can press the right and left arrow keys on the keyboard to move my trace cursor around the graph. If I press a

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number on the keyboard, such as 2, you can see a text box appear with the number 2 in it. If I press Enter, I'll

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jump right to the location on the curve where $x=2$, in this case. To find points of interest on this curve, I'll click

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Trace and choose Trace settings. In this dialog box, I'll check the box that says Enable CALC menu. Then I'll click

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OK. Now I'll go to Trace and Graph Trace again, but notice there's now a message in the upper-left corner telling

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me that I can press the “?” key for hints. Pressing this will reveal a list of the available points for your software.

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For example, let’s say I want to find the minimum value of this curve. Using the list, I can see that I can press

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the letter “n” to find this, so I’ll press “n” on the keyboard. This will place a gray vertical area in my graph with the

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instructions to place this range. I need to give it a general general area in which to search for a minimum value. I can increase

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or decrease the range by pressing the up and down arrow keys, and I can shift the range left and right using the

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left and right arrow keys. I’ll move the range approximately where the minimum value is located, and then press the

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Enter key. Notice I can see a label that says “minimum” and the coordinates for the minimum value, (0,6), are shown.

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You can also trace more than one curve at a time. I’ll graph a second function by clicking in the entry line at

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the bottom of the graph and typing “x” followed by the Enter key. Now I’ll click Trace, Graph Trace again,

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and then I’ll press the up arrow key twice to enter a view that traces all functions at

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the current x value.

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