

Exact Values

Teacher Instructions

7 8 9 10 **11** 12



The instructions provided here are applicable to OS 4.4 or higher. To check your calculator's operating system navigate to the HOME screen, select Settings (5) followed by Status (4).

Exact Values - Axis

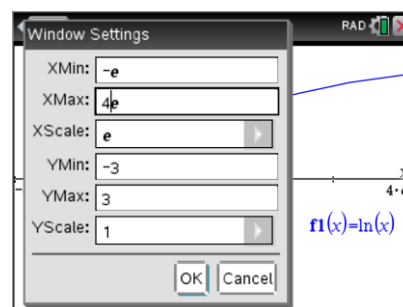
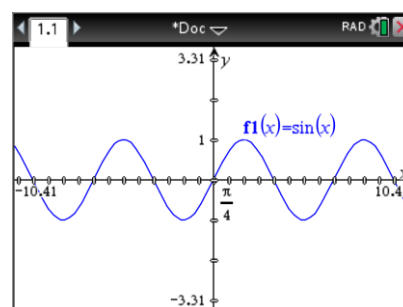
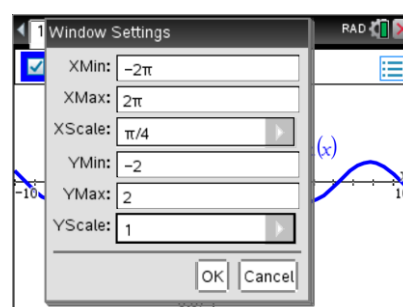
It is possible to display exact values on the x and y axis in the Graph Application. This is particularly important for trigonometric functions.

Exact values can be achieved by entering in the corresponding exact values in the Window Settings. Note that the Graph Application is currently set to Radians.

The exact scale persists even if the axes are changed by grabbing and dragging, however the end points change according to the new zoom level.

Exact values are not limited to multiples of π .

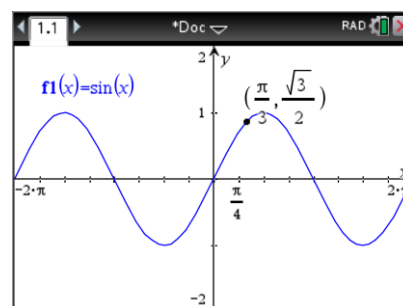
Other transcendental or irrational expressions may also be used to help draw attention to particular features of a graph or function.



Exact Values – On a function

It is possible to determine exact values on a function that has been graphed.

In the example opposite the value for $x = \frac{\pi}{3}$ is computed.

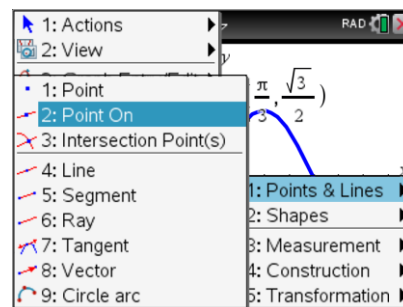


From the menu in the Graph Application:

Geometry > Points & Lines > Point On

Use the navigation pad to move the mouse over the function then click to select the function then click again to determine the location of the point. The coordinates of the point are automatically displayed.

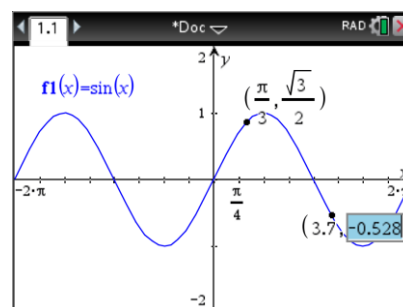
Press [ESC] to release the Point On tool.



Navigate to the x coordinate of the point and click once to select then a second time to edit.

Type in the exact value to be computed and the corresponding y value will be returned.

If a y value is entered the calculator effectively does a 'solve' for the nearest local point, the corresponding x value is returned as an approximate value.



Exact Values – Calculations in a Graph Application

With the exception of axis scales and specific points; graphs, gradients, integrals, points of intersection and any other computed values in a Graph application are approximate only.

The example shown opposite show a graph of the function:

$$f(x) = x^2 \text{ with point } P = \left(\frac{\sqrt{2}}{2}, \frac{1}{2} \right)$$

A tangent is drawn at point P using the corresponding geometry tool. The equation for the tangent is approximate.

Specific or additional settings relating to the quantity of digits shown for any calculation in a Graph application can be changed using the Settings Menu within the Graph application.

