

# Zooming in and zooming out!

This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.

Select GRAPH mode from the main menu by using the arrow keys to highlight the GRAPH icon or pressing 5.

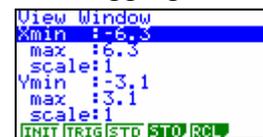


This worksheet shows how the calculator can be used to 'zoom in' or 'zoom out' to view a graph to 'fit' onto the screen. Once you have drawn a particular function, by pressing SHIFT F2 you will activate the Zoom option. This allows the user to zoom in or out from a particular point on the function by a given or specified factor. It will also allow the user to zoom in on a specific part of the graph.

## Introduction

Open the GRAPH-window, and make sure that the V-Window is appropriate to see the graphs that you will be drawing.

**SHIFT** **F3** Select **F1**, in this case for INITIAL conditions.



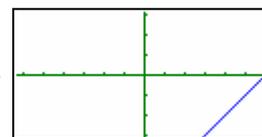
Now, the **EXIT** or **EXE** key to go back to the *Graph Func* window.

**Example 1:** Draw the graphs of  $y = x - 6$

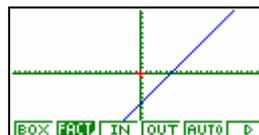
**Answer:** Type in X-6 into the 'Y1 space'  
Press **EXE** to store this equation.



... and **EXE** or **F6** to draw the graph.



To redraw in a 'larger window' then use the ZOOM **SHIFT** **F2** and then OUT **F4** twice.



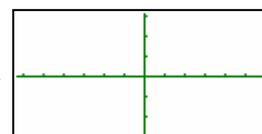
**Example 2:** Draw the graphs of  $y = 2x - 15$

**Answer:** Reset the V-window to INITIAL conditions – see *Introduction*.

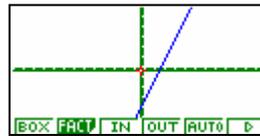
Type in  $2x - 15$  into the 'Y1 space'  
Press **EXE** to store this equation



... and **EXE** or **F6** to draw the graph.



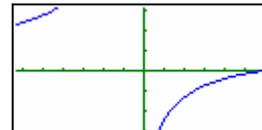
To redraw in a 'larger window' then use the ZOOM **SHIFT** **F2** and then OUT **F4** thrice.



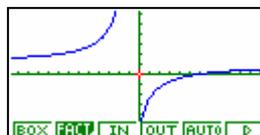
**Example 3:** Draw the graphs of  $y = (x - 6) \div (x+1)$   
**Answer:** Reset the V-window to INITIAL conditions – see *Introduction*.  
 Type in  $(x - 6) \div (x+1)$  into the 'Y1 space'  
 Press **EXE** to store this equation.



... and **EXE** or **F6** to draw the graph.



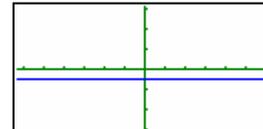
To redraw in a 'larger window' then use the ZOOM **SHIFT** **F2** and then OUT **F3** once.



**Example 4:** Draw the graphs of  $y = -0.5$   
**Answer:** Reset the V-window to INITIAL conditions – see *Introduction*.  
 Type in  $-0.5$  into the 'Y1 space'  
 Press **EXE** to store this equation



... and **EXE** or **F6** to draw the graph.

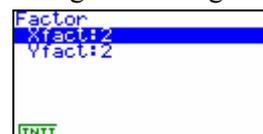


To redraw in a 'larger window' then use the ZOOM **SHIFT** **F2** and then IN **F3** once.

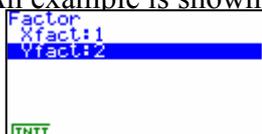


**N.B. 1.** Once a function has been drawn and you have zoomed in or out, you can activate the Sketch option by pressing **SHIFT** **F4**. Using this option allows you to sketch tangents, normals, inverse functions, draw a circle with a specified radius, sketch vertical and horizontal lines and more!

**N.B. 2.** The **FACT**or for zooming in or out can be changes to suit the needs of the user, **SHIFT** **F2** **F2** and the graph type been drawn. The **INIT**ial setting is a scaling factor of 2 in both the x and y axes, as illustrated here.



An example is shown below.



For further tips, more helpful information and software support visit our website [www.monacocorp.co.nz/casio](http://www.monacocorp.co.nz/casio)