

Using Table Values to Choose Window Settings Classic View

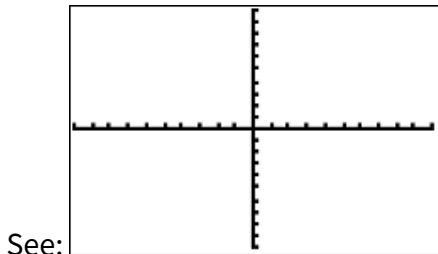
Objectives:

- Observe that the standard graphing window can be inappropriate
- Use the table to identify x-axis Window settings
- Use the table to identify y-axis Window settings

Observe that the standard graphing window can be inappropriate

Confusing Example 1: Graph $y = \sqrt{x-11}$ in the standard window.

Press



See:

This is an example of a graph which is located entirely outside the standard window. Either the x-values are greater than 10 or less than -10, and/or the y-values are greater than 10 or less than -10!

Use the table to identify x-axis Window settings

Example 1, continued: Make an automatic table for $y = \sqrt{x-11}$ and change the window.

Set up an automatic table by pressing:

many times.

See:

TABLE SETUP		
TblStart=-10		
ΔTbl=1		
Indent:	Auto	Ask
Depend:	Auto	Ask

X	Y1
-10	ERROR
-9	ERROR
-8	ERROR
-7	ERROR
-6	ERROR
-5	ERROR
-4	ERROR

X	Y1
8	ERROR
9	ERROR
10	ERROR
11	0
12	1
13	1.4142
14	1.7321

Press + for ΔTbl














IMPORTANT: The equation is not defined for values of x that are less than 10, so no graph appears. We want x-values to the right of the standard screen, $x \geq 11$, so Xmax=10 is too small.

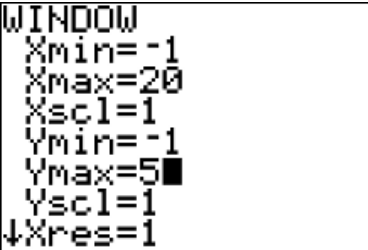
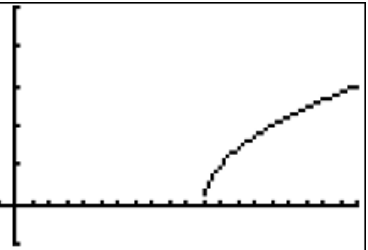
Press:

See:





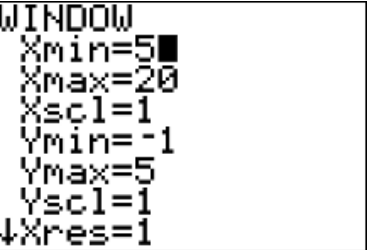
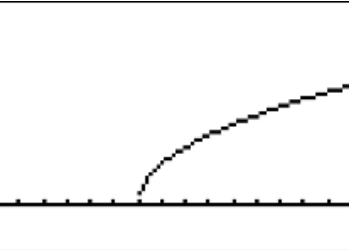
WINDOW	
Xmin=-10	
Xmax=20	
Xscl=1	
Ymin=-10	
Ymax=10	
Yscl=1	
↓Xres=1	

PRO TIP: There is a lot of blank space on this graph which we could remove by refining the Window.

Press:             

See:  





CAUTION: If Xmin is greater than 0, the y-axis will disappear from the screen. Don't draw a graph like this on your paper, because we can't tell what values are visible on the x-axis ticks!

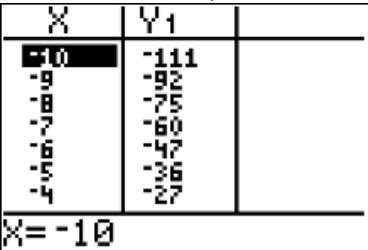
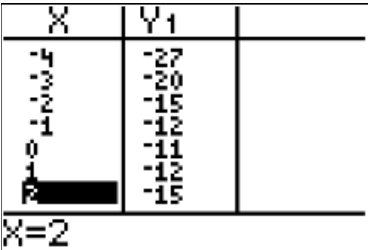
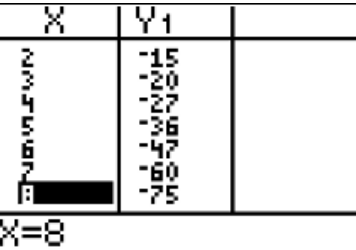
Press:     to see:  

Use the table to identify y-axis Window settings

Example 2: Graph $y = -x^2 - 11$ in the standard window, use a table, then re-graph.










Press:            See only empty axes.

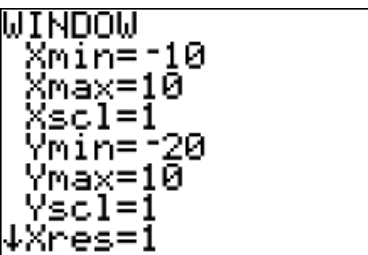
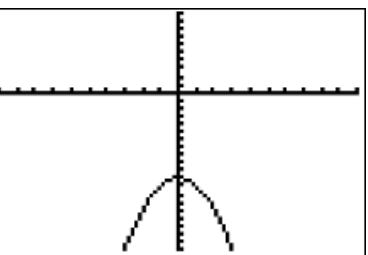
Re-start table at -10, press        and  many times.

See:   

All the y-values are smaller than -10, so no graph appears.

We want y-values to the bottom of the standard screen, $y \leq -11$, so Ymin=-10 is too big.

Press:         

See:  

Again, we can refine the window, with (for example) Xmin=-5, Xmax=5, Ymax=1, keeping Ymax > 0.