

MTH245

Excel as a Graphing Calculator

Have students watch me through one demo, then have them click along on second one.

Graphing

Start, Stop and Number of steps are parameters, pick values (keep number of steps at 100).

Calculate Step Size = $\frac{(\text{stop} - \text{start})}{\text{number of steps}}$ Use Shading, and parenthesis

Start Value	
Stop Value	
Number of Steps	
Step size	

Use Headers and Borders for the table, make it pretty and easy to locate key information. In general: first x = start cell, first y = formula using first x, second x = start cell + step size cell **as an absolute** address (F4) then copy second x and first y to complete table.

(Use $f(x) = x \cdot \sqrt{20-x}$ for first ex $y = 5-2x$ for second ex)

Split screen then fill table by selecting first x (D4), use GoTo to E103, shift-click then ctrl-D

Insert Scatter Plot to graph

Edit to make a workable, readable graph:

- To rescale a chart axis, right click on axis select format axis
- To clean up line, right click on line format data series, marker options, none. Can change line width also.
- To change Series 1 to meaningful words, Right click in chart, select data, edit, new name

To zoom in, decide what values of x you would like to zoom in between. These are your new start and stop values. Change those and your table and chart automatically update. By setting up the Start, stop as parameters the table is dynamic and easy to modify.

Solving Equations

Type equation to be solved in upper left corner, set up table for x Guess, Left Side, Right Side, Difference. Use shading and borders to keep it nice.

x guess	Left Side	Right Side	Difference

Enter guess*, each side of equation (referencing the cell with guess) and difference formula**
*any number, **=left side – right side

Data, Data Tools, What-if Analysis, Goal Seek: set cell = difference, to value = 0, by cell = x guess

Note: if more than one solution, goal seek won't look for a second and which solution found would depend on what guess you started with. And also, some equations have no solutions.

Examples: $2x + 8 = 0$, $x^2 + 5x + 4 = 3x + 7$