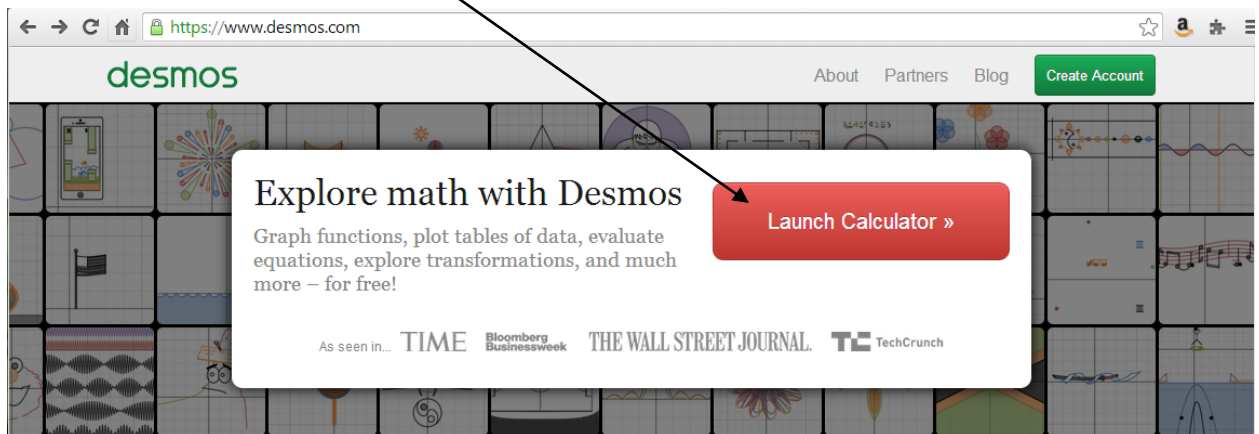

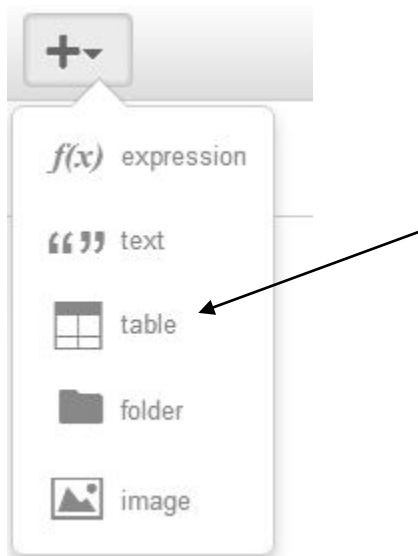


Desmos Tutorial Lab 3:

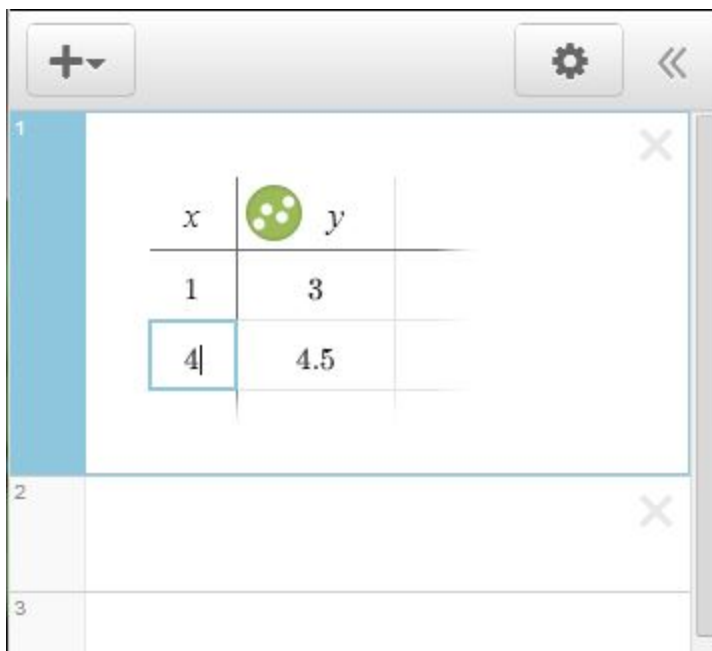
1. Go to www.desmos.com
2. Click the "Launch Calculator" Button




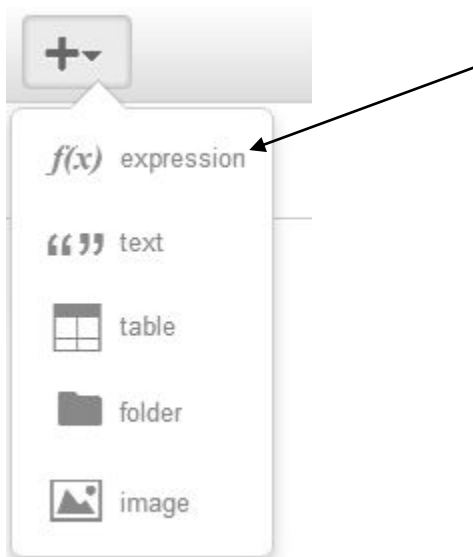
3. Click the "add item" button 
4. Select "Table" from the drop down menu:



5. Enter your data values into the appropriate X and Y columns (You will begin to see points appear on the graphing area on the right):



6. Once your data is entered and points are visible on the graphing area, click the "Add Item" button again  and choose "f(x) Expression" from the drop down list:



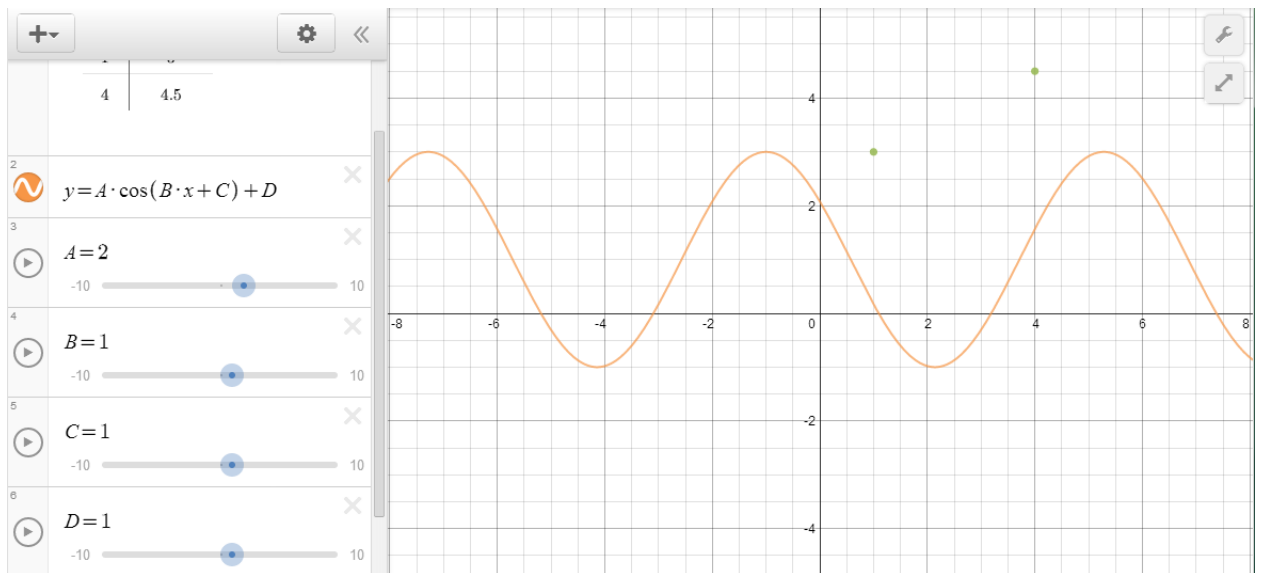
7. In the box that is now open and set to be typed in, type in the expression (w/o quotations): " $y=A*\cos(B*x+C)+D$ ", as you type buttons for each of your constants should appear below:

The screenshot shows a window with a data table and a function editor. The data table is as follows:

x	y
1	3
4	4.5

Below the table, the function editor shows the equation $y = A \cdot \cos(B \cdot x + C) + D$. There are four sliders for parameters A, B, C, and D, and a blue "all" button.

- Once completed typed, click the blue "all" button, shown above
- 4 new sliders will open and a cosine curve should be visible in the graphing area. Drag each slider in both directions to see how each constant affects the appearance of your "best fit" curve:



- Once you understand how each slider works, use them to manipulate your function plot to best fit your data points. It's possible the set minima and maxima for the sliders will not have wide enough breadth. To change this, once your slider is at the appropriate maximum value (where it is approaching a best fit match) click on the given "constant"=# value and type in an appropriately scaled number to try and get a better fit:

The screenshot shows a software interface for fitting a cosine function. The interface consists of a list of parameters to be adjusted, each with a play button icon and a slider. The parameters are:

- 2 $y = A \cdot \cos(B \cdot x + C) + D$
- 3 $A = 1$ (slider from -10 to 10)
- 4 $B = 24$ (slider from -10 to 24)
- 5 $C = 1$ (slider from -10 to 10)

11. Once you have a best fit match, capture the graph and data and save it. Record your set A, B, C, and D constant values for analysis.