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| **Problem 1 – Reflecting the Exponential Function** | |
| Enter the equation *y* = *ex* on the o screen. Then press p and change the following parameters: **Xmax**=5 and **Ymax**=5. Leave all others the same. Press s to observe its graph.  **1.** What would the inverse of this graph look like? |  |
| Recall that an inverse of a function if found when the input (*x*) is switched with the output (*y*).  Press y [table] to access a table of values for your function.  **2.** Record the *y*-values under the original *y*-value column in the table below.  Next record the inverses of each point by switching the *x*- and *y*-values and recording the results in the inverse columns in the table below. |  |
| |  |  |  |  | | --- | --- | --- | --- | | **Original *x*-value** | **Original *y*-value** | **Inverse *x*-value** | **Inverse *y*-value** | | **–2** |  |  |  | | **–1** |  |  |  | | **0** |  |  |  | | **1** |  |  |  | | **2** |  |  |  | | **3** |  |  |  | | |
| Now, plot out these inverse points by pressing … Í and entering the inverse values in **L1** and **L2**.  To set up the scatter plot of the two lists, press  y [stat plot] and match the screen to the right.  Now press s to observe the plotted values. |  |
| **3.** What do you notice about the plotted values?  Graph the equation *y* = *x* to test your observation.  **4.** Find the inverse of *y* = *ex.* This is done by switching *x* and *y* (exchanging the input with the output) in the equation and solve for *y*.  Check your result by graphing this result to see if it passes through all the plotted points. | |
| **Extension – Reflecting *y* = 10*x*** | |
| Repeat the process of the activity, but use *y* = 10*x*.  **5.** Find the inverse of *y* = 10*x.* | |