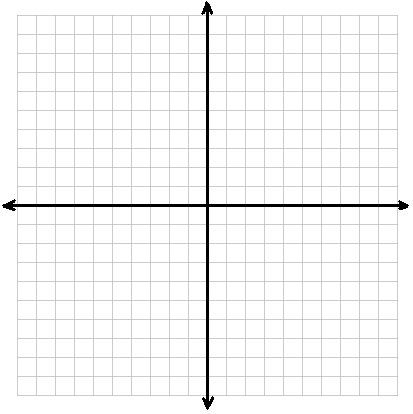
Math 109 – Investigating Inverse Functions

1. Let be the function Fill out the following data table and sketch the graph of the function.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |  |



1. We want to find the *inverse* of this function. The symbol for the inverse function is An inverse function “un-does” the function. For example, we know that with this function 0 is mapped to -5. For the inverse function, we want -5 to map to 0. Fill out the following table of values for the inverse function.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | -5 |  |  |  |  |
|  | 0 |  |  |  |  |

1. Plot these points on the graph above and use them to graph the inverse function. Do you see any similarities in the graph of and? How are the two graphs related?
2. Notice that to find the inverse function, you switched the and values of both the data and the graph. Use the same method to find the inverse using the formula for the function. Take the equation

and switch the and values. Then solve for the new . This is the equation of the inverse function.

1. Does every function have an inverse function? Can you think of any reason a function might not have an inverse function?