**Graphing Radical Functions**

**~ Mathematical Communication Problem Choices ~**

Unit Specific Problem Choices. You only need to choose ONE to base your project on!

**This project will include three steps:**

1. Find the inverse of the function algebraically (see Unit 5, lesson 4 if you don’t remember how). Explain the steps for finding the inverse clearly – as usual.
2. Graph both the function and its inverse on the same graph (they can be sketches/not perfect graphs – the important points need the be clear/labeled) AND clearly list/define the domain and range for BOTH the function and its inverse.
3. Explain how you can graphically tell that they are inverses by identifying at least three points from each function and explaining the relationship found between them.

Complete the three steps above for any ONE of the following functions:

1. $f\left(x\right)= -\sqrt{x-5}+1$
2. $g\left(x\right)= -\sqrt{x+2}+3$
3. $h\left(x\right)=\sqrt{x-4}-5$
4. $j\left(x\right)=-\sqrt{x+3}-2$

You need to:

* Solve for the inverse, explaining all steps you used throughout the problem!
* Sketch the graph for both (it’s fine to use a graphing calculator to help, but you still need to sketch a graph for your project) AND explain what the domain/range is for both graphs
* Check your inverse graphically. Thoroughly explain how the points are related between the graphs that help you confirm your solution for the inverse.

\*\*Remember, you have 3 options to choose from on how to complete your project. In writing, via a verbal demonstration, or more visually/creatively – all of which is explained in the page you were given that outlines the requirements for the Mathematical Communication Project you will have for every unit. Also remember that you only need to complete ONE of the problems above!!\*\*