**Senior Math Name:**

*A New Type of Transformation- Investigation*

1. Sketch a graph of y = $\sqrt{x}$ at right. Actual
2. Using desmos.com, graph $\frac{y}{-1}=\sqrt{x}$ . Sketch the graph at right. Actual

How does the graph compare to the graph of the parent function?

(Reminder: $\frac{y}{-1}=\sqrt{x}$ is the same as –y = $\sqrt{x}$ which is the same as y = -$\sqrt{x}$ .

1. Using desmos.com, graph y $=\sqrt{\frac{x}{-1}}$ . Sketch the graph at right. Actual
How does the graph compare to the graph of the parent function?

(Reminder: y $=\sqrt{\frac{x}{-1}}$ is the same as y $=\sqrt{-x}$ . )

1. Make a prediction. What will the graph $\frac{y}{-1}=\sqrt{\frac{x}{-1}}$ look like? Prediction Actual

Using desmos.com, graph $\frac{y}{-1}=\sqrt{\frac{x}{-1}}$ . Sketch the graph at right.

How does the graph compare to the graph of the parent function?

1. Predict what the graph of $ \frac{y}{-1}=x^{2}$ will look like. Prediction Actual

Using desmos.com, graph $\frac{y}{-1}=x^{2}$ . Sketch the graph at right.
How does the graph compare to the graph of the parent function?

(Reminder: $\frac{y}{-1}=x^{2}$ is the same as $-y=x^{2}$ . )

1. Predict what the graph of $ y=(\frac{x}{-1})^{2}$ will look like. Prediction Actual

Using desmos.com, graph $y=(\frac{x}{-1})^{2}$ . Sketch the graph at right.
How does the graph compare to the graph of the parent function?

Why does this happen???

(Reminder: $ y=(\frac{x}{-1})^{2}$ is the same as $y=(-x)^{2}$ . )

1. Using desmos.com, graph $y-4=\left(x-2\right)^{2}$ . Sketch the graph at right. Actual

How does the graph compare to the graph of the parent function?

Using desmos.com, graph $\frac{y-4}{-1}=\left(x-2\right)^{2}$ . Sketch the graph at right. Actual

 How does the graph compare to the graph of the parent function?

1. Predict what would the graph of $y-3=\sqrt{\frac{x-4}{-1}}$ would look like. Prediction Actual

Check your prediction using desmos.com.

 How does the graph compare to the graph of the parent function?

1. Predict what would the graph of $\frac{y+3}{-1}=\sqrt{\frac{x-2}{-1}}$ would look like. Prediction Actual

Check your prediction using desmos.com.

How does the graph compare to the graph of the parent function?

1. Predict what would the graph of $\frac{y+3}{-1}=\sqrt{x-4}$ would look like. Prediction Actual

Check your prediction using desmos.com.

How does the graph compare to the graph of the parent function?

**Summarize your results! (THIS IS THE MOST IMPORTANT PART!)**

How will the graph of $y=f(\frac{x}{-1})$ compare to the graph of y = f(x)??? (Note: $y=f(\frac{x}{-1})$ is the same as $y=f(-x)$.)

How will the graph of $\frac{y}{-1}=f(x)$ compare to the graph of y = f(x)??? (Note: $\frac{y}{-1}=f\left(x\right)$ is the same as $y=-f(x)$.)