Number:\_\_\_\_Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_

**Desmos Exploration: Linear Inequalities**

1.) Graph *y = x + 4* on desmos.com

2.) Test 3 points that lie **above** the graph of *y = x + 4*. Substitute the coordinates of each of the points for (x,y) in the inequality *y > x + 4*. Say whether each point is true or false in the chart below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Above Point** |  |  |  |
| **Substitute into*****y > x + 4*** |  |  |  |
| **True or false?** |  |  |  |

3.) Test 3 points that lie **below** the graph of *y = x + 4*. Substitute the coordinates of each of the points for (x,y) in the inequality *y > x + 4*. Say whether each point is true or false in the chart below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Below Point** |  |  |  |
| **Substitute into*****y > x + 4*** |  |  |  |
| **True or false?** |  |  |  |

4.) Critical thinking: To graph *y > x + 4*, would you graph points above or below *y = x + 4*? Explain why.

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5.) Would you graph points **above** or **below** the graph of *y = x – 2*  to graph the inequality *y < x – 2* ? Explain why.

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