**IM2. Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 3 “Absolute Value Functions” Date \_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_**

**Day 1: Introducing… The Absolute Value Function ~ Using the calculator to graph and finding key characteristics of the graph**



Let’s take a look at y = x (Graph in your calculator as )

What happens if we change every negative y-value

to a positive value? i.e. make the point (3, -3) become

(3, +3)

Does this sound familiar? What takes negative values and makes them positive?

Introducing …….. the Absolute Value Function



We can analyze the **parent function** for special points and behavior -

 Use your calculator to graph: 

Domain:

Range:

Vertex:

y-intercept:

zeros (roots, x-intercepts, solutions):

Increasing:

Decreasing:

End Behavior:

Slope of right branch:

We can also **move** the parent function to other places on the coordinate plane. Use your calculator to graph each and find the key characteristics.

|  |  |
| --- | --- |
| Domain:  Range:  Vertex:  Y-intercept:  Zeros / X-intercepts:  Increasing:  Decreasing:  End Behavior:  Slope of right branch: | Domain:  Range:  Vertex:  Y-intercept:  Zeros / X-intercepts:  Increasing:  Decreasing:  End Behavior:  Slope of right branch: |

**Are you noticing any patterns yet?** Let’s look at domain and range.

|  |  |
| --- | --- |
| Domain:  Range:  Vertex:  Y-intercept:  Zeros / X-intercepts:  Increasing:  Decreasing:  End Behavior:  Slope of right branch: | Domain:  Range:  Vertex:  Y-intercept:  Zeros / X-intercepts:  Increasing:  Decreasing:  End Behavior:  Slope of right branch: |

**Are you noticing any patterns yet?** Let’s look at slope of the right branch.



Review topic: 1.

1. Graph the **inverse** of the Absolute Value Function

(start out with the original )

***Think about how you graph an inverse!***

Is the inverse a function?

Were you expecting this? Why? 2.

1. Graph an absolute value function that has a

**removable discontinuity** at (3, 4)