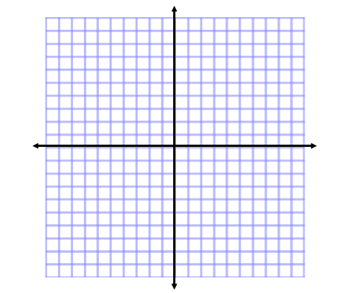
**Exponential Funtions**

Name:

Students can:

* Target #3: Identify characteristics of exponential functions on the graphs
* Target #4: Use technology to graph and identify characteristics of exponential functions

**WARM-UP:**

Watch the video on cell division to answer the following questions.

1. In the function , when b > 1 what does the function do?

2. What does the coefficient (the 1) represent?

3. When the coefficient changed to a 4, how did the GRAPH change?

4. How did the graph change when the base changed from a 2 to a 3?

**MINI LESSON:**

Go to [www.desmos.com](http://www.desmos.com) and click “Launch Calculator.”

|  |
| --- |
| **Exponential Functions:** |

|  |  |
| --- | --- |
| *Graph the following functions on the same screen:*    Describe how the graphs are different.  What stayed the same? | *Graph the following functions on the same screen:*  Describe how these graphs are different.  So the coefficient determines the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

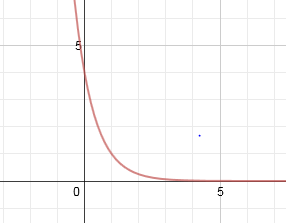
|  |  |
| --- | --- |
|  | |
| *Graph the following functions on the same screen:*    Describe how these graphs are different than the first three that we graphed. | *Graph the following functions on the same screen:*    Describe the transformation.  If you don’t see it yet, graph |

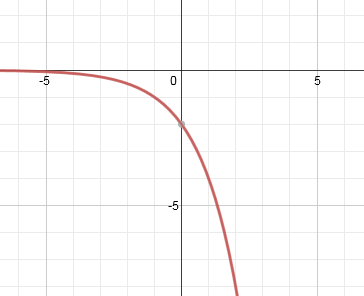
|  |  |
| --- | --- |
| *Graph the following functions on the same screen:*    Describe the transformation.  If you don’t see it yet, graph | Based on the parent function ,  A fractional base (b value) causes a reflection across  the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  and a negative coefficient (a value) causes a  reflection across the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

**WORKSHOP:**

**Use the graphs of the following functions to answer the questions.**

**1. f 2. f**





What is the y-intercept? What is the y-intercept?

What is the x-intercept? What is the x-intercept?

What is the domain? What is the domain?

What is the range? What is the range?

What transformations occurred? What transformations occurred?

**Draw a quick sketch for each function. Fill in the chart. Describe the transformations.**

y=-5x

|  |  |  |
| --- | --- | --- |
| Sketch: | Domain: | x-intercept: |
| Range: | y-intercept: |

3. 5.

6.

7.

y=3(½)x

|  |  |  |
| --- | --- | --- |
| Sketch: | Domain: | x-intercept: |
| Range: | y-intercept: |

4.

8.