**Graphing Equations Team Poster Project**

y = bx

Now that you have investigated graphs for *y* = *bx*, your teacher will assign your team one of the graphs to investigate further.

**0 < b < 1** **b > 1**

1. *y* = $\left(\frac{1}{4}\right)^{x}$ 2. *y* = $\left(\frac{1}{2}\right)^{x}$ 3. *y* = 4*x* 4. *y* = 2*x*

 5. *y* = $3∙ $2*x*

* **Write your assigned equation here:**

1.

**Create a table to represent the equation:**

(Use some negative numbers and use zero as input values)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Input (x) |  |  |  |  |  |  |  |  |  |
| Output (y) |  |  |  |  |  |  |  |  |  |

**Make a sketch of your graph:**



**Creating the Poster**

|  |
| --- |
| 1. Poster will include a complete graph. A complete graph has the following components:* *x*-axis and *y*-axis labeled, clearly showing the scale.
* Equation of the graph near the line or curve.
* Line or curve extended as far as possible on the graph.
* Coordinates of special points stated in (*x*, *y*) format.
 |

2. Poster will include a table. Tables can be formatted horizontally, like the one on the previous page, or vertically.

3. Be sure to include all of your observations. Anyone should be able to answer the questions below after examining your poster.

**Use COLORS, ARROWS, LABELS, and other tools to help explain your ideas.**

* How can you describe the shape of the graph?
* What happens when *x*gets larger? What happens when *x* gets smaller?
* Are there any special points? Can they be explained with the equation?
* Does the graph have any symmetry?  If so, where?
* Are there any connections between the three representations?

**Grading Rubric:**

Graph is a complete graph

**Part 1** 10 points 0 10

Table is included/correct

**Part 2** 5 points 0 5

Ideas are explained

**Part 3** 10 points 0 10

Gallery Walk Reflections are thoughtfully written

**Part 4** 5 points 0 5

Total Points\_\_\_\_\_ / 30

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Gallery Walk Reflections**

1. How does changing the value of b affect a graph?

2. Do you see any similarities between exponential functions and linear functions? If so what are they? What are the differences?

3. What questions do you still have after this investigation?

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Gallery Walk Reflections**

1. How does changing the value of b affect a graph?

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3. What questions do you still have after this investigation?