Graphing Exponential Functions Assignment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Graphing Exponentials** | **R** | **1** | **2** | **3** | **4** |
|  |  |  |  |  |

$$y=2∙5^{3\left(x+4\right)}+6$$

a= 2  multiply y by 2

k = 3  divide x by 3

d  translate left 4 so subtract 4 from the x’s

c translate up 6 so add 6 to the y’s

Do you multiply or divide anything by 5? NO!!! It is just the base of the power. You only use the **5x** to make the parent table.

|  |  |
| --- | --- |
| x | y = 5x |
| -2 | 5-2 = 0.04 |
| -1 | 5-1 = 0.2 |
| 0 | 50 = 1 |
| 1 | 51 = 5 |
| 2 | 52 = 25 |

What do we do to the x’s? Divide all x by 3 and then subtract 4

What do we do to the y’s? Multiply all y by 2 and then add 6

|  |  |
| --- | --- |
| x ÷ 3 -4 | y · 2 + 6 |
| -2 | 6.08 |
| -1 | 6.4 |
| 0 | 8 |
| 1 | 16 |
| 2 | 56 |

To Graph: 1. Plot asymptote at y= 6

2. Determine the shape of graph. (regular since not reflected at all)

 3. Plot points.

 4. Draw graph.



**NOW YOU TRY:**

1. y = 3 -2(x-6) -1

Is there an a? NO

Is there a k? YES. What is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is there any reflections? YES. Which type? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the parent function? y = 3x

Make the parent table.

|  |  |
| --- | --- |
| x | y = 3x |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

Make the table for the transformed function, y = 3 -2(x-6) -1

|  |  |
| --- | --- |
| x  | y  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

What is the equation of the asymptote?

 y = \_\_\_\_\_\_\_\_\_

y=3x is moved right, moved down and reflected in the y-axis. Which of the following should it look like?

 

Sketch the function.



2. y = - 2 · 4 (x+1)

Is there an **a** or a **k**? \_\_\_\_\_\_\_ Are there any reflections? Which type? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the parent function? \_\_\_\_\_\_\_\_\_\_\_\_

Make the parent table.

|  |  |
| --- | --- |
| x |  |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

Make the table for the transformed function, y = - 2 · 4 (x+1)

|  |  |
| --- | --- |
| x  | y  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

What is the equation of the asymptote? y = \_\_\_\_\_\_\_\_\_

Sketch the function.

