|  |
| --- |
| **Graphing Exponential Functions**Horizontal Asymptote = k-value |

**Example 1:** Graph $y= 2^{x+3}-5$



Transformations: Asymptote:

Domain: Range:

**Example 2:** Graph $y= -3^{x-1}+6$



Transformations: Asymptote:

Domain: Range:

Glue this side down!

|  |
| --- |
| **Graphing Exponential and Logarithmic Functions** |

**Exponential Function:** A function whose unknown (x) is located in the exponent.

EX: y = 2x



**Logarithmic Function:** The inverse function of an exponential function.

EX: y = log2x



|  |
| --- |
| **Finding the Inverse of a Logarithm****Step 1:** Swap x and y**Step 2:** Isolate the log**Step 3:** SWOOSH to convert into an exponential function and solve for y |

**Graphing Logarithmic Functions**

**Step 1:** Find the inverse of x and y

**Step 2:** Make a table

**Step 3:** Swap the x and y values on the table

**Step 4:**  Graph the function (Don’t forget the asymptote!)

Vertical Asymptotes = h-value

**Example 1:** Graph y = log2x + 3

Domain: Range: Vertical Asymptote: Transformations:

**Example 1:** Find the inverse of y = log5x



**Example 2:** Find the inverse of y = log7x - 1

****

**Example 3:** Find the inverse of y = log3(x-2)

**Example 2:** Graph y = log4(x – 2) + 1

Domain: Range: Vertical Asymptote: Transformations:

****

**Example 4:** Find the inverse of y = log4(x + 3) - 8