Math 3 **6.7 Graphing Exponentials and Logs** Unit 6

*SWBAT graph exponential and logarithmic functions on the coordinate plane.*

**Example 1:** Find the inverse of the following. Remember, swap x and y, and solve for y again!

1. y = log5x
2. y = log7x - 1
3. y = log3(x-2)
4. y = log4(x + 3) – 8

|  |  |
| --- | --- |
| **Exponential Function** | **Logarithmic Function** |
| A function whose unknown (x) is located in the exponent | The inverse function of an exponential function. |
| **Transformations:** y = a(b)(x-h) + k  | **Transformations:** y = a∙logb(x-h)+k |
| **Domain:** |  | **Domain:** |  |
| **Range:** |  | **Range:** |  |
| **Asymptote:** |  | **Asymptote:** |  |

**Example 2:** Graphing Exponential Functions



1. Graph $y= 2^{x+3}-5$

Transformations:

Asymptote:

Domain:

Range:

End Behavior:

1. Graph $y= -3^{x-1}+6$

Transformations:

Asymptote:

Domain:

Range:

End Behavior:

**Example 2:** Graphing Logarithmic Functions



1. Graph y = log2x -3

Transformations:

Asymptote:

Domain:

Range:

End Behavior:

1.  Graph y = –log4(x +4) + 2



Transformations:

Asymptote:

Domain:

Range:

End Behavior: