FST Name:

Notes 5.4 Date: Block:

***5.4 Evaluate Logarithms and Graph Logarithmic Functions***

**Definition of Logarithm with Base *b***

* Let *b* and *y* be positive numbers with . The logarithm of *y* with base *b* is denoted and is defined as follows:

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_ if and only if \_\_\_\_\_\_\_\_\_\_\_\_\_ | The expression is read as….  |

Rewrite each of the following from Logarithmic form to exponential form.

1) 2) 3)

Rewrite each of the following from exponential form to logarithmic form.

1) 2) 3)

**Evaluate the logarithms.**

1) 2) 3)

4) 5) 6)

7) 8) 9)

|  |
| --- |
| **Logarithmic Properties** |
|  =  |
|  =  |
|  =  |
|  =  |

 **Change of Base Formula: Example)**

Evaluate log612 =

**Common Logarithm vs. Natural Logarithm**

|  |  |
| --- | --- |
| **Common Logarithm** | **Natural Logarithm** |
|  |  |
| **Evaluate:**  | **Evaluate:**  |

**Parent Graphs and Transformation Graphs of Logarithms**

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