*Review 6.2-6.3 (****Key****)*

1. Rewrite in exponential form.

 a. = **=**

 b. = 1/2 **=**

2. Rewrite in logarithmic form.

 a. = 125  **=**

 b. =  **= *r***

3. Evaluate.

 a. **= ; thus,**  **because**

 b.  **thus,**  **because**

 c.

4. Find the inverse function:

 a. ) = **) =**

 b. =

5. For each function, complete the table and graph the function.

 a. ) =

|  |  |
| --- | --- |
| ***x*** | ***y*** |
| **1** |  |
| **3** |  |
| **9** |  |
| **1/3** | **1** |
| **1/9** |  |

 

 b. ) =

|  |  |
| --- | --- |
| ***x*** | ***y*** |
| **1** |  |
| **3** |  |
|  |  |
| **1/3** | **1** |
| **1/9** | **2** |

 

6. Find the domain.

 a.  **or**

 b. **, therefore, or**

 c.  **, therefore, or**

 **(Note: On part "*c,*" remember we reverse the inequality symbol when dividing by a negative quantity.)**

7. For each logarithmic function, find the corresponding transformations.

 a. ) = **up 11** **units**

 b. ) = **left 11** **units**

 c. ) = **right 7, down 15**

 d. ) = **reflection about the *x*-axis, up 2**

8. Evaluate and round your answer to 3 decimal places where needed.

 a. **54.598**

 b. **9.961**

 c. **1/2 or 0.5**

 d. **0.901**

9. Find the initial value, the continuous growth or decay rate, and the growth or decay factor.

 a. *P*(*t*) *=*

 **= 43 = 0.064, continuous growth rate is 6.4%**

 **growth factor is ≈ 1.0661**

 b. *N*(*t*) *=*

**= 178 = 0.075, continuous decay rate is 7.5%**

 **decay factor is ≈ 0.9277**

 10. Ronald bought a sport utility vehicle in 2009, which unfortunately started losing its

 value as soon as he drove off the lot. Ronald's SUV's value can be modeled by the function

 *V*(*t*) *=* 21305, where *t* represents years after 2009.

 a. Find and interpret *V*(0).

  **= 21,305 Ronald's SUV initial value, before it is driven away from the car lot.**

 b. Find *V*(5). Round your answer to the nearest dollar. Interpret your answer.

  ***=* 21305= 8971.**

 **After 5 years, Ronald's SUV value will decline to $8,971.**

 c. After what year will the SUV's value drop to $5,338?

 **Let *Y1=* 21305and  *Y2 =* 5338 Graph and find intersection.**



 **Under normal circumstances, this SUV's value will drop to $5,338 after 2017.**