*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:

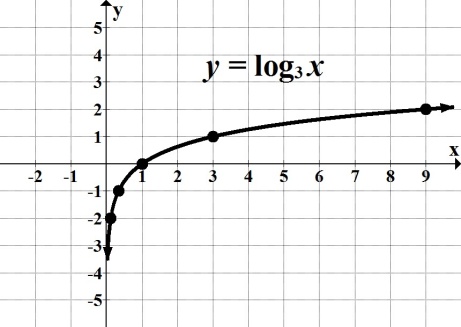
a. ) = **) =**

b. =

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

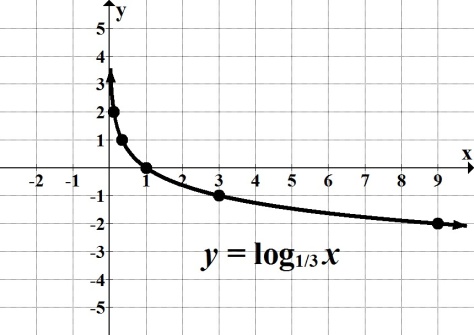
a. ) =

|  |  |
| --- | --- |
| ***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.**