**Review Unit 3**  Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Honors Pre-Calc NO CALCULATOR**

**U3LT1 - I can identify properties of an exponential and logistic function and I can graph them.**

1. Graph and state the following: 2. Write the function of the exponential graph that goes through f(0)= 3 and f(2) = 9

Domain:

Range:

Intercept:

Intercept:

Asymptotes:

End Behavior Limits:

Intervals of Increase:

Intervals of Decrease:

3. Graph and state the following:

Domain:

Range:

Intercept:

Intercept:

Asymptotes:

End Behavior Limits:

Intervals of Increase:

Intervals of Decrease:

**U3LT2 - I can identify properties of a logarithmic function and I can graph them.**

4. Graph and state the following:

Domain: Range:

Intercept: Intercept:

Asymptotes:

End Behavior Limits:

Intervals of Increase:

Intervals of Decrease:

5. Create the transformation from the parent graph of :

a.) Shift up 8, right 3, vertical stretch of 4 and reflection of the x axis.

b.) Left 6, vertical shrink of ½ and down 2

**U3LT3 - I can apply properties of logarithms and exponents to simplify expressions.**

**Simplify.**

6. 7. 8.

**Write each logarithmic expression as a single logarithm.**

9.  10. log *a* − log *ab*  11.

**Expand each logarithm.**

12. **** 13.  14.

**CALCULATORS ARE ALLOWED**

**U3LT4 - I can apply properties of exponents and logarithms to solve equations.**

**Solve each equation. Round to 4 decimals places.**

15.  **** 16. ****17. 



18.  19.  20.

**U3LT5 - I can apply my knowledge of exponential and logarithmic functions to investigate real world applications**

21.You put $2000 into an account earning 4% interest compounded quarterly. Find the amount in the account at the end of 8 years.

22. Gold-198 has a half-life of 2.7 days. How much of a 96 g sample of gold-198 will be left after 8.1 days?

23.Wanting to buy Cubs World Series tickets you withdrew $4,320 from a compound continuous interest account that you invested $3,500 ten years ago. Find the rate at which interest was earned.

**U3LT6 - I can investigate a scenario and create a regression model that best fits the data whether it be linear, exponential, or logarithmic.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Speed (mph) | 10 | 20 | 30 | 40 | 50 |
| Stopping Distance(feet) | 15.1 | 39.9 | 75.2 | 120.5 | 175.9 |

24. (a) Determine which type of regression is the best fit for this data.

(b) Find the regression equation for the data. (Round to the 1,000th )

(c) Use your equation to estimate the number of feet needed to stop the car if traveling 80 mph.

(d) At what time will the stopping distance be 28 feet?