GSE Algebra II Unit 7 – Mathematical Modeling Test Good Luck! ☺

_____ is ready for this last test!! Date _____

Multiple Choice: Circle the one correct answer & write the corresponding letter in the blank **3 pts each**

_____ 1. Given $a_2 = -20$ *and* $a_6 = -12500$ find the geometric formula.

A. $a_n = -4(5)^{n-1}$ B. $a_n = -4(2)^{n-1}$ C. $a_n = 4(-2)^{n-1}$ D. $a_n = 4(5)^{n-1}$

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2. Given $a_n = \frac{3}{4}(\frac{2}{3})^{n-1}$, find a_8.

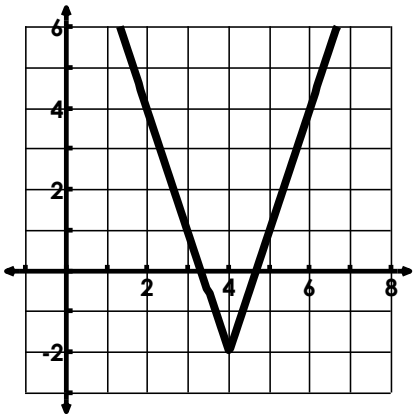
_____ A. $a_8 = \frac{6561}{512}$ B. $a_8 = \frac{128}{6561}$ C. $a_8 = \frac{5859375}{2048}$ D. $a_8 = \frac{32}{729}$

Using the graph to the right,

3. Which of the following describes the transformations of the graph?

I. Right 4 II. Down 2 III. Shrink 3 IV. Stretch 3

_____ A. I and II C. I, II, III
B. I, II, IV D. All of the Above



4. Which absolute value equation matches the graph?

A. $g(x) = 3|x-4|-2$
B. $g(x) = -3|x-4|-2$
_____ C. $g(x) = 3|x+4|-2$
D. $g(x) = 3|x-4|+2$

Free Response: 5 pts each

5. Determine if the sequence is geometric. Then, **write the formula** and **find a_{12}**.

A. 4, 8, 16, 32, ...

a_n = _____ a_{12} = _____

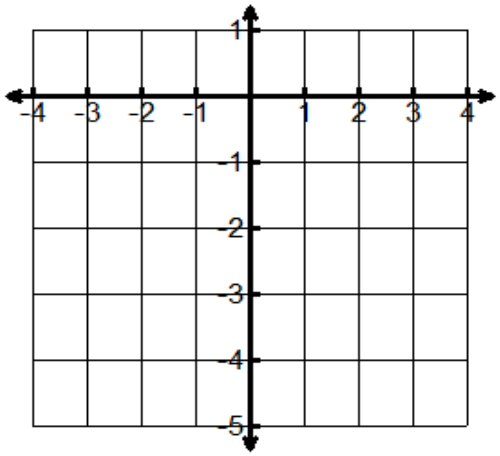
6. Evaluate the geometric series described. $\sum_{n=1}^{7} 3(2)^{n-1}$

7. Given the explicit formula for a geometric sequence, find the **first five terms**.
$a_n = -0.2\,(-4)^{n-1}$

8. Find the sum of the geometric series.
$2 + 8 + 32 + 128 \ldots n = 7$

9. Determine the number of terms n in the geometric series.
$a_1 = 3,\ r = 4,\ S_n = 16383$

10. **Graph** the absolute value function.
$f(x) = -\frac{1}{2}|x| + 1$
Then State the **vertex** and **transformations.**



Vertex: _____

Transformations:

1._____

2._____

3._____