Pre-AP Precalculus Name _____
Geometric HW Date _____ Period _____

Write the first five terms of each sequence defined by the given explicit formula. Start with n = 1.

1. $a_n = -4(2)^n$ _____

2. Write the explicit formula for the geometric sequence given $a_2 = 15$ and $a_5 = 1875$. Then use this formula to find the 7^{th} term.

_____ 7^{th} term _____

3. Evaluate: $\sum_{k=1}^{10} 5(-1)^{k-3}$ _____

4. Evaluate: $\sum_{k=0}^{\infty} 6(0.6)^k$ _____

Tell whether the sequence is arithmetic, geometric, or neither and give explicit formula for the sequence.

5. 3, 12, 48, 192… _____

6. $\ln 1, \ln 2, \ln 4, \ln 8, \ln 16, \ldots$ _____

7. $\frac{2}{3}, \frac{5}{9}, \frac{8}{27}, \frac{11}{81} \ldots$ _____

8. List the first four terms of the geometric sequence

given $a_1 = 3$ and $a_n = 4a_{n-1}$

9. Find a_{15} in the geometric sequence where $a_3 = 7$ and $r = -3$

10. Find S_{15} of the geometric series $2 + -6 + 18 + -54 + \ldots$

11. Find the sum of the infinite geometric series, if it exits. $14 + 7 + 3.5 + 1.75 + \ldots$

12. Find the sum of the infinite geometric series, if it exits. $8 + 10 + 12.5 + 15.625 + \ldots$

13. Find the sum of the infinite geometric series, if it exits. $\sum_{n=1}^{\infty}\left(\frac{2}{3}\right)^{n-1}$

14. Find the sum of the infinite geometric series, if it exits. $\sum_{k=0}^{\infty}\left(\frac{5}{3}\right)^{k+1}$

15. If $a_2=4$ and $a_5=108$ in a geometric sequence. Find a_1.