Name: _____ Date: _____

Geometric Sequences and Series

Determine whether each sequence could be geometric or arithmetic. If possible find the common ratio or common difference.

1.) $1.1, -3.3, 9.9, -29.7, 89.1, \ldots$

2.) $-18, -7, 4, 15, 26, \ldots$

3.) $1, 2, 6, 24, 120, 720, \ldots$

4.) $3125, 2500, 2000, 1600, 1280 \ldots$

Find the 10th term of each geometric sequence.

5.) $1600, 800, 400, 200, \ldots$

6.) $0.0000001, 0.00001, 0.001, .1, \ldots$

7.) $-64, 96, -144, 216, \ldots$

8.) $2, -6, 18, -54, \ldots$

Find the 8th term of the geometric sequence with the given terms.

9.) $a_3 = 12, a_6 = 96$

10.) $a_{15} = 100, a_{17} = 25$

11.) $a_{11} = -4, a_{13} = -36$

12.) $a_3 = -4, a_5 = -36$

Find the geometric mean of each pair of numbers.

13.) 2 *and* 8

14.) 4 *and* 25

15.) 2 *and* 3

Find the indicated sum for each geometric series.

16.) S_7 *for* $14, 42, 126, 378 \ldots$

17.) $\sum_{k=1}^{8} (-4)^{k-1}$

34.) Deanna received an e-mail asking her to forward it to 10 other people. Assume that no one breaks the chain and that there are no duplicate recipients. How many e-mails will have been sent after 8 generations, including Deanna's.