

Geometric Series

Date _____ Period _____

Evaluate each geometric series described.

1) $a_1 = -4, r = 3, n = 10$

2) $a_1 = 3, r = 3, n = 10$

3) $a_1 = -2, r = 5, n = 9$

Evaluate the related series of each sequence.

4) $-3, -12, -48, -192$

5) $1, 2, 4, 8, 16$

6) $-0.6, -3, -15, -75$

Evaluate each geometric series described.

7) $3 - 6 + 12 - 24\dots, n = 6$

8) $-3 + 12 - 48 + 192\dots, n = 6$

9) $-3 + 6 - 12 + 24\dots, n = 9$

10) $\sum_{m=1}^8 5^{m-1}$

11) $\sum_{i=1}^8 4 \cdot (-4)^{i-1}$

12) $\sum_{m=1}^8 -4 \cdot 3^{m-1}$

Determine the number of terms n in each geometric series. (Hint: use logarithms)

13) $2 + 6 + 18 + 54\dots, S_n = 19682$

14) $-2 - 8 - 32 - 128\dots, S_n = -682$

15) $-2 + 8 - 32 + 128\dots, S_n = -104858$