Name _____

13-2A **Lesson Master**

SKILLS Objective B

In 1–3, a geometric series is given. Find a. the first term, b. the common ratio, c. the number of terms, and d. the sum using the Finite Geometric Series Sum Theorem.

1. $5 + 10 + 20 + 40 + 80$

   a. _____ b. _____ c. _____ d. _____

2. $4 - 12 + 36 - 108 + 324$

   a. _____ b. _____ c. _____ d. _____

3. $v + \frac{1}{5}v + \frac{1}{25}v + \ldots + \frac{1}{3125}v$

   a. _____ b. _____ c. _____ d. _____

4. Find the sum of the first fifteen terms of the sequence
   $\begin{cases} g_1 = 20 \\ g_n = 0.9g_{n-1} \text{ for integers } n \geq 2 \end{cases}$ _____

SKILLS Objective C

In 5 and 6, a. write the geometric series in summation notation and b. find the sum.

5. $5 + 5r + 5r^2 + \ldots + 5r^{19}$ a. _____   b. _____

6. $8 - 4 + 2 - 1 + \frac{1}{2} - \ldots - \frac{1}{1024}$ a. _____   b. _____

In 7 and 8, a. determine whether the summation is an arithmetic or a geometric series, and b. find the value of the series.

7. $\sum_{i=1}^{12} (3 + 2i)$ a. _____   b. _____

8. $\sum_{i=1}^{12} (3 \cdot 2^i)$ a. _____   b. _____

USES Objective G

9. A labor union agrees to a six-year contract. Workers will be paid $60,000 in the first year and receive a 5% raise each successive year. How much will a worker make in total over the six years?   _____

10. Mr. Buescher pushes his two-year-old daughter on a swing set. On one swing, she travels forward 8 feet from back to front. Then he stops pushing, and she gradually slows down with each swing traveling 94% as far as the previous swing. Find the total distance traveled forward in ten swings.   _____