

## 12.23 Classwork

For each sequence, state if it is arithmetic or geometric

1) 4, 20, 100, 500, 2500, ...

2) -36, 164, 364, 564, 764, ...

3)  $-\frac{3}{5}, \frac{11}{15}, \frac{31}{15}, \frac{17}{5}, \frac{71}{15}, \dots$

4) 4, -8, 16, -32, 64, ...

Write the formula for the nth term. (You'll need to determine if the sequence is arithmetic or geometric). Then find the given term.

5) -36, -30, -24, -18, ...  
Find  $a_{31}$

6) -4, -12, -36, -108, ...  
Find  $a_{10}$

7) -22, -29, -36, -43, ...  
Find  $a_{33}$

8) -2, 4, -8, 16, ...  
Find  $a_9$

**Find the sum of the first  $n$  terms of the series (You'll need to determine if the sequence is arithmetic or geometric).**

9)  $-1 + 3 - 9 + 27\dots, n = 6$

10)  $8 + 14 + 20 + 26\dots, n = 14$

11)  $-2 - 8 - 32 - 128\dots, n = 8$

12)  $8 + 15 + 22 + 29\dots, n = 7$

**Evaluate each series described.**

13)  $\sum_{k=3}^7 (9k - 8)$

14)  $\sum_{n=1}^7 4^{n-1}$