For each sequence, state if it is arithmetic, geometric, or neither. Identify the common difference/ratio.

1) 4, 16, 36, 64, 100, ...
2) 25, 225, 425, 625, 825, ...

3) -160, -80, -40, -20, -10, ...
4) 34, 38, 42, 46, 50, ...

Find the term named in the problem and write the explicit formula.

5) 5, 1, -3, -7, ...
Find \( a_{20} \)

6) -8, -4, 0, 4, ...
Find \( a_{31} \)

7) 14, 20, 26, 32, ...
Find \( a_{29} \)

8) \( a_n = 5 - 5n \)
Find \( a_{28} \)

Find the missing term or terms in each arithmetic sequence.

9) ..., 29, ___, 37, ...
10) ..., -6, ___, 54, ...

11) ..., 8, ___, ___, 23, ...
12) ..., -19, ___, ___, 41, ...

Find the term named in the problem and write the explicit formula.

13) \( a_n = 3 \cdot (-3)^{n-1} \)
Find \( a_9 \)

14) 2, -6, 18, -54, ...
Find \( a_{11} \)
15) \(-1, -2, -4, -8, \ldots\)
Find \(a_{12}\)

16) \(3, 6, 12, 24, \ldots\)
Find \(a_{11}\)

Find the missing term or terms in each geometric sequence.

17) \(\ldots, 3, \_, \_, 108, \ldots\)

18) \(\ldots, 4, \_, \_, 36, \ldots\)

19) \(\ldots, -3, \_, \_, \_, -375, \ldots\)

20) \(\ldots, 4, \_, \_, \_, 864, \ldots\)

Evaluate each arithmetic series described.

21) \(16 + 26 + 36 + 46\ldots, \ n = 8\)

22) \(\sum_{n=1}^{7} (5n + 3)\)

23) \(\sum_{i=1}^{12} (3i - 12)\)

24) \(\sum_{n=1}^{35} (3n - 4)\)

Evaluate each geometric series described.

25) \(-3 - 9 - 27 - 81\ldots, \ n = 7\)

26) \(\sum_{n=1}^{7} 2^{n-1}\)

27) \(\sum_{n=1}^{8} -3 \cdot 2^{n-1}\)

28) \(\sum_{i=1}^{9} 3^{i-1}\)