

# Practice 11-4

## Arithmetic Series

For each sum, find the number of terms, the first term, and the last term.

Then evaluate the series.

1.  $\sum_{n=1}^4 (n - 1)$

2.  $\sum_{n=2}^6 (2n - 1)$

3.  $\sum_{n=3}^8 (n + 25)$

4.  $\sum_{n=2}^5 (5n + 3)$

5.  $\sum_{n=1}^4 (2n + 0.5)$

6.  $\sum_{n=1}^6 (3 - n)$

7.  $\sum_{n=5}^{10} n$

8.  $\sum_{n=1}^4 (-n - 3)$

9.  $\sum_{n=3}^6 (3n + 2)$

Write the related series for each finite sequence. Then evaluate each series.

10. 1, 3, 5, ..., 15

11. 5, 8, 11, ..., 26

12. 4, 9, 14, 19, ..., 44

13. 10, 25, 40, 55, 70, 85

14. 17, 25, 33, 41, 49, 57, 65

15. 125, 126, 127, ..., 131

Use summation notation to write each arithmetic series for the specified number of terms.

16.  $1 + 3 + 5 + \dots; n = 7$

17.  $2.3 + 2.6 + 2.9 + \dots; n = 5$

18.  $4 + 8 + 12 + \dots; n = 4$

19.  $10 + 7 + 4 + \dots; n = 6$

20.  $3 + 7 + 11 + \dots; n = 8$

21.  $15 + 25 + 35 + \dots; n = 7$

Tell whether each list is a *series* or a *sequence*. Then tell whether it is *finite* or *infinite*.

22. 7, 12, 17, 22, 27

23.  $3 + 5 + 7 + 9 + \dots$

24. 8, 8.2, 8.4, 8.6, 8.8, 9.0, ...

25.  $1 + 5 + 9 + 13 + 17$

26. 40, 20, 10, 5, 2.5, 1.25, ...

27.  $10 + 20 + 30 + 40 + 50$

Each sequence has six terms. Evaluate each related series.

28. 1, 0, -1, ..., -4

29. 4, 5, 6, ..., 9

30. -7, -9, -11, ..., -17

31. -6, -7, -8, ..., -11

32. 0, 0.3, 0.6, ..., 1.5

33. 5, 7, 9, ..., 15

34. An embroidery pattern calls for 5 stitches in the first row and for three more stitches in each successive row. The 25th row, which is the last row, has 77 stitches. Find the total number of stitches in the pattern.

35. A marching band formation consists of 6 rows. The first row has 9 musicians, the second has 11, the third has 13 and so on. How many musicians are in the last row and how many musicians are there in all?

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