

Determine if the sequence is arithmetic. If it is, find the common difference, the 52nd term, and the explicit formula.

1) 10, 7, 4, 1, ...

2) 7, 71, 711, 7111, ...

Evaluate each arithmetic series described.

3) $\sum_{n=1}^{20} (10n - 14)$

4) $\sum_{i=1}^{40} (7i - 13)$

5) $\sum_{m=1}^{30} 10m$

6) $\sum_{n=1}^{11} (4 - 2n)$

7) $\sum_{i=3}^7 10i$

8) $\sum_{n=2}^{11} (3n - 12)$

9) $a_1 = 16, a_n = 136, n = 25$

10) $a_1 = -11, a_n = -43, n = 9$

11) $a_1 = 24, d = 7, n = 11$

12) $a_1 = 10, d = 4, n = 10$

$$a_{10} = 10 + 9(4)$$

$$a_{10} = 46$$

56

$$5 \times 28$$

Determine the number of terms n in each arithmetic series.

13) $a_1 = -11, a_n = -51, S_n = -279$

14) $a_1 = 19, a_n = 75, S_n = 423$

Algebra 2 Unit 4 Practice

LESSON 19-1

1. Which of the following is an arithmetic sequence?
 - A. 2, 4, 8, 16, 32
 - B. 1, 2, 3, 5, 8, 13
 - C. 2, 4, 7, 11, 16, 22
 - D. 6, 12, 18, 24, 30

2. What are the first five terms in each sequence?
 - a. $a_n = -2(n + 1)$?
 - b. $a_n = (2n - 4)$?
 - c. $a_n = 3(n - 2)$?

3. What is the common difference in each sequence?
 - a. -4, 1, 6, 11, 16
 - b. 3, 7, 11, 15
 - c. -12, 10, 32, 54

4. **Construct viable arguments.** Why is the sequence 2, 4, 8, 16, 32 not arithmetic?

5. **Critique the reasoning of others.** Amber says that the next two terms in the sequence 3, 7, 11, 15, 19 are 24 and 28. Is she correct? Why or why not?

LESSON 19-2

6. Which is the partial sum S_8 , given $a_1 = 6$ and $d = 9$?

A. 15	B. 72
C. 300	D. 432

7. Find the indicated partial sum of each arithmetic series.

- a. $a_1 = 1, d = -2$; find S_{11}
- b. 4, 15, 26, 37 ...; find S_{14}
- c. -17, -8, 1, 10 ...; find S_{15}

8. **Model with mathematics.** Brian just posted a social media story. If he shares the post with 11 friends when he posts, and 5 new people see the post each minute, how many total people will have seen it after:
 - a. $\frac{1}{2}$ hour?
 - b. 45 minutes?
 - c. 55 minutes?

9. **Attend to precision.** What is the sum of the first 11 numbers in the arithmetic sequence where $a_1 = 1.3$ and $d = 0.65$?

10. Find the indicated term in each sequence.

- a. $a_1 = 5, d = 7$; find a_9
- b. $a_1 = -9, d = -4$; find a_{13}
- c. $a_1 = 24, d = 9$; find a_{17}

LESSON 19-3

11. Which is the correct value of the partial sum

$$\sum_{n=2}^{12} 1 + \frac{n-1}{2} + \sum_{n=-9}^9 3 + (2n-2)?$$

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|--------|--------|
| A. 21 | B. 63 |
| C. -57 | D. 432 |