

Determine whether each sequence is arithmetic. If so, identify the common difference.

1. $2, 3, 5, 8, \dots$

2. $0, -3, -6, -9, \dots$

3. $0.9, 0.5, 0.1, -0.3, \dots$

4. $3, 8, 13, 18, \dots$

5. $14, -15, -44, -73, \dots$

6. $3.2, 3.5, 3.8, 4.1, \dots$

7. $-34, -28, -22, -16, \dots$

8. $2.3, 2.5, 2.7, 2.9, \dots$

9. $127, 140, 153, 166, \dots$

10. $11, 13, 17, 25, \dots$

In 11-16, write a recursive and explicit formula for each arithmetic sequence.

Find the 43rd term of each sequence.

11. $12, 14, 16, 18, \dots$

12. $13.1, 3.1, -6.9, -16.9, \dots$

15. $2, 13, 24, 35, \dots$

16. $21, 15, 9, 3, \dots$

Find the missing term of each arithmetic sequence.

21. $\dots, 23, \square, 49, \dots$

22. $14, \square, 28, \dots$

23. $\dots, 29, \square, 33, \dots$

27. $-2, \square, 2, \dots$

28. $\dots -6, \square, 2, \dots$

29. $-34, \square, 77, \dots$

33. A teacher donates the same amount of money each year to help protect the rainforest. At the end of the second year, she has donated enough money to protect 8 acres. At the end of the third year, she has donated enough money to protect 12 acres. How many acres will the teacher's donations protect at the end of the tenth year?

34. **Writing** Explain how you know that the sequence 109, 105, 101, 97, 93, \dots is arithmetic.

Find the arithmetic mean a_n of the given terms.

35. $a_{n-1} = 5, a_{n+1} = 11$

36. $a_{n-1} = 17, a_{n+1} = 3$

37. $a_{n-1} = -8, a_{n+1} = -9$

38. $a_{n-1} = -0.6, a_{n+1} = 3.8$