

Determine if the sequence is arithmetic. If it is, find the common difference.

1. 35, 32, 29, 26, ...

$d = -3$

2. -34, -64, -94, -124, ...

$d = -30$

3. -7, -9, -11, -13, ...

$d = -2$

Given the explicit formula for the arithmetic sequence, find the first 5 terms and the term named in the problem.

4.  $a_n = -11 + 7n$ ; Find  $a_{34}$

-4, 3, 10, 17, 24

$a_{34} = 227$

5.  $a_n = -7.1 - 2.1n$ ; Find  $a_{27}$

-9.2, -11.3, -13.4,  
 -15.5, -17.6

$a_{27} = -63.8$

Given the first term and the common difference of an arithmetic sequence, find the first five terms and the explicit formula.

6.  $a_1 = 28$ ,  $d = 10$

28, 38, 48, 58, 68

$a_n = 10n + 18$

7.  $a_1 = -34$ ,  $d = -10$

-34, -44, -54, -64, -74

$a_n = -10n - 24$

Given a term in an arithmetic sequence and the common difference, find the explicit formula.

8.  $a_{38} = -53.2$ ,  $d = -1.1$

$a_n = -11.4 - 1.1n$

9.  $a_{37} = 249$ ,  $d = 8$

$a_n = 8n - 47$

Given the first term and the common difference of an arithmetic sequence, find the first four terms and the recursive formula.

10.  $a_1 = \frac{3}{5}$ ,  $d = -\frac{1}{3}$   $\frac{3}{5}, \frac{4}{15}, -\frac{1}{15}, -\frac{6}{15}$

$a_{k+1} = a_k - \frac{1}{3}, a_1 = \frac{3}{5}$

11.  $a_1 = 8$ ,  $d = -2$  8, 6, 4, 2, 0

$a_{k+1} = a_k - 2, a_1 = 8$

Given a term in an arithmetic sequence and the common difference, find the recursive formula.

12.  $a_{21} = -1.4$ ,  $d = 0.6$

$a_{k+1} = a_k + 0.6, a_1 = -13.4$

13.  $a_{38} = -278$ ,  $d = -8$

$a_{k+1} = a_k - 8, a_1 = 18$

Given two terms in an arithmetic sequence, find the explicit formula.

14.  $a_{18} = 3362$  and  $a_{38} = 7362$

$$a_n = 200n - 238$$

15.  $a_{18} = 97$  and  $a_{40} = 229$

$$a_n = 6n - 11$$

Evaluate each arithmetic series.

16.  $\sum_{k=1}^{35} (5k - 2)$

$$3080$$

17.  $\sum_{n=1}^{15} 4n$

$$480$$

18.  $20 + 27 + 34 + 41 + \dots$ ,  $n = 16$

$$1160$$

19.  $7 + 9 + 11 + 13 + \dots$ ,  $n = 10$

$$160$$

Determine the number of terms in each arithmetic series.

20.  $a_1 = 19$ ,  $a_n = 96$ ,  $S_n = 690$

$$n = 12$$

21.  $a_1 = -3$ ,  $d = 2$ ,  $S_n = 21$

$$n = 7$$

22.  $(-2) + (-12) + (-22) + (-32) + \dots$ ,  $S_n = -224$

$$n = 7$$