

Arithmetic Sequences

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

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

2) -3, -23, -43, -63, ...

3) -34, -64, -94, -124, ...

4) -30, -40, -50, -60, ...

5) -7, -9, -11, -13, ...

6) 9, 14, 19, 24, ...

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

7) $a_n = -11 + 7n$
Find a_{34}

8) $a_n = 65 - 100n$
Find a_{39}

9) $a_n = -7.1 - 2.1n$
Find a_{27}

10) $a_n = \frac{11}{8} + \frac{1}{2}n$
Find a_{23}

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

11) $a_1 = 28, d = 10$

12) $a_1 = -38, d = -100$

13) $a_1 = -34, d = -10$

14) $a_1 = 35, d = 4$

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

15) $a_{38} = -53.2, d = -1.1$

16) $a_{40} = -1191, d = -30$

17) $a_{37} = 249, d = 8$

18) $a_{36} = -276, d = -7$

Given the first term and the common difference of an arithmetic sequence find the recursive formula and the three terms in the sequence after the last one given.

19) $a_1 = \frac{3}{5}, d = -\frac{1}{3}$

20) $a_1 = 39, d = -5$

21) $a_1 = -26, d = 200$

22) $a_1 = -9.2, d = 0.9$

Given a term in an arithmetic sequence and the common difference find the recursive formula and the three terms in the sequence after the last one given.

23) $a_{21} = -1.4, d = 0.6$

24) $a_{22} = -44, d = -2$

25) $a_{18} = 27.4, d = 1.1$

26) $a_{12} = 28.6, d = 1.8$

Given two terms in an arithmetic sequence find the recursive formula.

27) $a_{18} = 3362$ and $a_{38} = 7362$

28) $a_{18} = 44.3$ and $a_{33} = 84.8$

Geometric Sequences

Determine if the sequence is geometric. If it is, find the common ratio.

1) $-1, 6, -36, 216, \dots$

2) $-1, 1, 4, 8, \dots$

3) $4, 16, 36, 64, \dots$

4) $-3, -15, -75, -375, \dots$

5) $-2, -4, -8, -16, \dots$

6) $1, -5, 25, -125, \dots$

Given the explicit formula for a geometric sequence find the first five terms and the 8th term.

7) $a_n = 3^{n-1}$

8) $a_n = 2 \cdot \left(\frac{1}{4}\right)^{n-1}$

9) $a_n = -2.5 \cdot 4^{n-1}$

10) $a_n = -4 \cdot 3^{n-1}$

Given the recursive formula for a geometric sequence find the common ratio, the first five terms, and the explicit formula.

11) $a_n = a_{n-1} \cdot 2$
 $a_1 = 2$

12) $a_n = a_{n-1} \cdot -3$
 $a_1 = -3$

13) $a_n = a_{n-1} \cdot 5$
 $a_1 = 2$

14) $a_n = a_{n-1} \cdot 3$
 $a_1 = -3$

Given the first term and the common ratio of a geometric sequence find the first five terms and the explicit formula.

15) $a_1 = 0.8, r = -5$

16) $a_1 = 1, r = 2$

Given the first term and the common ratio of a geometric sequence find the recursive formula and the three terms in the sequence after the last one given.

17) $a_1 = -4, r = 6$

18) $a_1 = 4, r = 6$

19) $a_1 = 2, r = 6$

20) $a_1 = -4, r = 4$

Given a term in a geometric sequence and the common ratio find the first five terms, the explicit formula, and the recursive formula.

21) $a_4 = 25, r = -5$

22) $a_1 = 4, r = 5$

Given two terms in a geometric sequence find the 8th term and the recursive formula.

23) $a_4 = -12$ and $a_5 = -6$

24) $a_5 = 768$ and $a_2 = 12$

25) $a_1 = -2$ and $a_5 = -512$

26) $a_5 = 3888$ and $a_3 = 108$