

Geometric Sequences

Find the term named in the problem, the explicit formula, and the recursive formula.

1) $-1, 3, -9, 27, \dots$
Find a_9

2) $-2, 6, -18, 54, \dots$
Find a_9

3) $-4, -8, -16, -32, \dots$
Find a_{11}

4) $1, 4, 16, 64, \dots$
Find a_9

Given the recursive formula for a geometric sequence find the first five terms.

5) $a_n = a_{n-1} \cdot 3$
 $a_1 = -4$

6) $a_n = a_{n-1} \cdot 5$
 $a_1 = 3$

Given a term in a geometric sequence and the common ratio find the term named in the problem and the explicit formula.

7) $a_1 = 2, r = 2$
Find a_{12}

8) $a_2 = -3, r = 3$
Find a_{12}

9) $a_6 = -128, r = 2$
Find a_9

10) $a_2 = 12, r = -3$
Find a_{12}

11) $a_2 = 4, r = 4$
Find a_{10}

12) $a_3 = 18, r = 3$
Find a_{10}

Answers to Geometric Sequences (ID: 1)

1) $a_9 = -6561$

Explicit: $a_n = -(-3)^{n-1}$

Recursive: $a_n = a_{n-1} \cdot -3$

$a_1 = -1$

2) $a_9 = -13122$

Explicit: $a_n = -2 \cdot (-3)^{n-1}$

Recursive: $a_n = a_{n-1} \cdot -3$

$a_1 = -2$

3) $a_{11} = -4096$

Explicit: $a_n = -4 \cdot 2^{n-1}$

Recursive: $a_n = a_{n-1} \cdot 2$

$a_1 = -4$

4) $a_9 = 65536$

Explicit: $a_n = 4^{n-1}$

Recursive: $a_n = a_{n-1} \cdot 4$

$a_1 = 1$

5) $-4, -12, -36, -108, -324$

6) $3, 15, 75, 375, 1875$

7) $a_{12} = 4096$

Explicit: $a_n = 2 \cdot 2^{n-1}$

8) $a_{12} = -177147$

Explicit: $a_n = -3^{n-1}$

9) $a_9 = -1024$

Explicit: $a_n = -4 \cdot 2^{n-1}$

10) $a_{12} = 708588$

Explicit: $a_n = -4 \cdot (-3)^{n-1}$

11) $a_{10} = 262144$

Explicit: $a_n = 4^{n-1}$

12) $a_{10} = 39366$

Explicit: $a_n = 2 \cdot 3^{n-1}$