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Writing Expression for Geometric Sequences - Guided Lesson Explanation

Explanation#1

The formula for the n^{th} term of a geometric sequence is

$a^n = a_1 r^{n-1}$

Where a^n is the n^{th} term, a_1 is the first term, r is the common ratio, and n is the position of a term in the sequence.

We have find a_1, the first term in the sequence.

-4, -16, -64, …..

The first term, a_1, is $^-$ 4.

Next find r, the common ratio between consecutive terms.

-4, $\xrightarrow{}$ -16, $\xrightarrow{}$ -64

The common ratio, r, is 4

Finally, plug $a_1 = ^-4$ and r = 4 into the formula.

$a_n = a_1 (r)^{n-1}$

$a_n = -4 (4)^{n-1}$

The sequence -4, -16, -64,….is described by the equation $a_n = -4 (4)^{n-1}$

Explanation#2

The formula for the n^{th} term of a geometric sequence is

$a^n = a_1 r^{n-1}$

Where a^n is the n^{th} term, a_1 is the first term, r is the common ratio, and n is the position of a term in the sequence.

we have to find a_1, the first term in the sequence.

-5, -25,-125,…..

The first term, a_1, is –5.

Next find r, the common ratio between consecutive terms.

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-5, -25, -125

The common ratio, r, is 5

Finally, plug a_1 = -5 and r = 5 into the formula.

$a_n = a_1 (r)^{n-1}$

$a_n = -5 (5)^{n-1}$

The sequence -5, -25, -125, ….is described by the equation $a_n = -5(5)^{n-1}$

Explanation#3

The formula for the n^{th} term of a geometric sequence is

$a^n = a_1 r^{n-1}$

where a^n is the n^{th} term, a_1 is the first term, r is the common ratio, and n is the position of a term in the sequence.

We have find a_1, the first term in the sequence.

-6, -36, -216, …..

The first term, a_1, is – 6.

Next find r, the common ratio between consecutive terms.

-6, -36, -216

The common ratio, r, is 6

Finally, plug a_1 = -6 and r = 6 into the formula.

$a_n = a_1 (r)^{n-1}$

$a_n = -6 (6)^{n-1}$

The sequence -6, -36, -216, ….is described by the equation $a_n = -6(6)^{n-1}$