

Variable Expressions and Sequences - Guided Lesson Explanation**Explanation#1**

Step 1) To find the 1st term, plug in $n=1$.

$$35n = 35(1) = 35$$

Step 2) Then to find 2nd term, plug in $n=2$.

$$35n = 35(2) = 70$$

Step 3) Then to find 3rd term, plug in $n=3$.

$$35n = 35(3) = 105$$

The sequence 35, 70, 105,... is described by the expression $35n$.

Explanation#2

Step 1) First we have to see what we have to be find out.

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

$$a_n = a_1r^{n-1}$$

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 2, 4, 8, 16,"

Step 2) Then find a_1 the first term in the sequence.

2, 4, 8, 16, ...

The first term, a_1 , is 2.

Step 3) Then find r , the common ratio between consecutive terms.

$$2, \xrightarrow{\times 2} 4, \xrightarrow{\times 2} 8, \xrightarrow{\times 2} 16$$

The common ratio, r , is 2.

Step 4) Then, finally plug $a_1 = 2$ and $r = 2$ into the formula.

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

$$a_n = 2(2)^{n-1}$$



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The sequence 2, 4, 8, 16, is described by the equation $a_n = 2(2)^{n-1}$.

Explanation#3

Step 1) To find 1st term, plug in $n=3$.

$$7(3)^n = 7(3)^3 = 7(27) = 189$$

Step 2) Then to find 2nd term, plug in $n=4$.

$$7(3)^n = 7(3)^4 = 7(81) = 567$$

Step 3) Then to find 3rd term, plug in $n=5$.

$$7(3)^n = 7(3)^5 = 7(243) = 1701$$

The first three terms of the sequence are 189, 567, 1701,

