

NAME: \_\_\_\_\_

P.I. A2.A.29: Identify a geometric sequence and find the formula for its  $n^{\text{th}}$  term

1. Create a geometric sequence. Write a recursive and explicit formula for your sequence.
2. Kara exercised 2 minutes a day the first week, 4 minutes a day the second, 8 minutes a day the third, and 16 minutes a day the fourth week. Describe the sequence, and predict whether she will be able to continue this pattern as she increases her exercise time.

[1] Answers may vary. Sample: 3, 12, 48, ...;  $a_n = 4a_{n-1}$ ,  $a_1 = 3$ ;  $a_n = 3 \cdot 4^{n-1}$

In this sequence, each number is two times the one preceding it. No, if Kara tries to continue this pattern  
[2] she will be exercising constantly.

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