BECA / Huson / Algebra 2 Unit 1 Sequences Name:

5 October 2023

PreTest: HSF-BF.A.2 Sequences and functions

1. Which defines the sequence $f(1) = 5, f(2) = 9, f(3) = 13, f(4) = 17, f(5) = 21$?
   A. $f(1) = 5, f(n) = 5 + f(n-1)$ for $n \geq 2$
   B. $f(1) = 5, f(n) = 9 + f(n-1)$ for $n \geq 2$
   C. $f(1) = 5, f(n) = 4 + f(n-1)$ for $n \geq 2$
   D. $f(1) = 9, f(n) = 5 + f(n-1)$ for $n \geq 2$

2. A sequence is defined by $f(1) = 2, f(n) = 3 \cdot f(n-1)$ for $n \geq 2$. Which of the following defines the n^{th} term?
   A. $f(n) = 2 + 3n$ for $n \geq 1$
   B. $f(n) = 2 + 3(n-1)$ for $n \geq 1$
   C. $f(n) = 2 \cdot 3^n$ for $n \geq 1$
   D. $f(n) = 2 \cdot 3^{n-1}$ for $n \geq 1$

3. Here are some values of sequence R. Write a recursive definition for the sequence.

n	$R(n)$
1	8
2	6
3	4

4. In the table below are some values of sequence S.

   A. Is the sequence arithmetic, geometric, or neither? Explain how you know.

n	$S(n)$
1	3
2	9
3	27

   B. Write a recursive definition for the sequence.

   C. For term $S(n)$, what are some values of n that make sense to use? What are some values of n that don't make sense to use? Explain your reasoning.

5. Here are some values of sequence T. (notice that the values for n are *not* consecuitive) Write a recursive definition for the sequence.

n	$T(n)$
1	1
3	7
6	16

6. The first two numbers in a sequence g are $g(1) = 3$ and $g(2) = 9$.
   A. If g is an arithmetic sequence, what is the value of the third term $g(3)$?

   B. Write a definition for the n^{th} term of g. Explain or show your reasoning.

   B. If g is a geometric sequence, write a definition for the n^{th} term of g. Explain or show your reasoning.