

Name: _____
Date: _____
Class: _____

Algebra
Review

The following are review problems focused on sequence and series:

- 1) What would the 5th term of $b_0 = 4, b_n = 2b_{n-1} + 5$ be?
a) 24 b) 29 c) 139 d) 283
- 2) If $f(1) = 1$ and $f(n) = -2 * f(n - 1)$ which term would $f(n) = -32$?
a) $f(3)$ b) $f(4)$ c) $f(5)$ d) $f(6)$
- 3) If $q_1 = 6, q_2 = 8, q_n = (q_{n-1})(q_{n-2})$ what would the 5th term be?
a) 18432 b) 384 c) 30 d) 22
- 4) If $f(1) = 9$ and $f(n) = 2 * f(n - 1)$ which of the following function could replace this geometric sequence?
a) $f(x) = 2 * 9^n$ b) $f(x) = 9 * 2^n$
c) $f(x) = 2 * 9^{n-1}$ d) $f(x) = 9 * 2^{n-1}$
- 5) If $a_0 = 10$ and $a_n = a_{n-1} + 6$ which of the following equations could be used to replace this recursive sequence?
a) $y = 6x + 10$ b) $y = 10x + 6$
c) $y = x + 6$ d) $y = x + 10$
- 6) Using $f(1) = 9$ and $f(n) = 2 * f(n - 1)$, what is the average rate of change from $x = 4$ to $x = 6$?

7) Create a geometric sequence that could be used to give the following values:

x	0	1	2	3	4	5	6	7	8
y	400	200	100	50	25	12.5	6.25	3.125	.78125

8) Using the following recursive sequence, what would the difference between terms be? Explain your answer.

$$s_0 = 5 \text{ and } s_n = s_{n-1} + 7$$

9) Create a recursive sequence that could be used to give the following values:

x	2	4	6	7
y	9	13	17	19

10) Tim says that the recursive sequence defined as $a_1 = 3, a_n = -a_{n-1}$ has only 2 possible outputs. Is he correct or incorrect? Explain.