

## Sequence Quiz

Date \_\_\_\_\_ Period \_\_\_\_\_

**For the following questions, choose the one correct answer.**

1) Is the sequence arithmetic? If so, identify the common difference.

13, 20, 27, 34, ....

- A) yes,
- $-7$
- B) no      C) yes, 7      D) yes, 13

2) Is the sequence geometric? If so, identify the common ratio.

6, 12, 24, 48, ....

- A) yes, 2      B) yes,
- $-2$
- C) yes, 4      D) no

**Describe the pattern in the sequence. Find the next three terms.**

3) 13, 15, 17, 19, ...

- A) Add 2; 23, 25, 27      B) Multiply by 2; 38, 76, 152
- 
- C) Add 2; 21, 23, 25      D) Add
- $-2$
- ; 17, 15, 13

4) 4, 8, 16, 32, ....

- A) Multiply by 2; 128, 256, 512      B) Multiply by
- $-2$
- ;
- $-64$
- , 128,
- $-256$
- 
- C) Multiply by 2; 64, 128, 256      D) Add 2; 34, 36, 38

**For the following questions, choose the one correct answer.**

5) Write a recursive formula for the sequence 8, 10, 12, 14, 16, .... Then find the next term.

- A)
- $a_n = a_{n-1} + 2$
- , where
- $a_1 = 18$
- ; 8      B)
- $a_n = a_{n-1} - 2$
- , where
- $a_1 = 2$
- ;
- $-2$
- 
- C)
- $a_n = a_{n-1} - 2$
- , where
- $a_1 = 8$
- ; 18      D)
- $a_n = a_{n-1} + 2$
- , where
- $a_1 = 8$
- ; 18

6) Consider the first six terms of this sequence:

6, 12, 24, 48, 96, ....

Which equation below recursively defines the sequence?

- A)
- $a_n = 2 \cdot a_{n-1}$
- B)
- $a_n = 3 \cdot 2^n$
- 
- C)
- $a_n = 6n$
- D)
- $a_n = 6 + a_{n-1}$

7) Write the explicit formula for the sequence. Then find the fifth term in the sequence:

$$a_1 = 3, r = -3$$

- A)  $a_n = 3 \cdot 3^n$ ; 243      B)  $a_n = -3 \cdot 3^{n-1}$ ; -243  
C)  $a_n = 3 \cdot (-3)^{n-1}$ ; 243      D)  $a_n = 3 \cdot (-3)^n$ ; -729

8) What is the explicit rule for the sequence: 11, 22, 44, 88, ....

- A)  $a_n = 2 \cdot 11^{n-1}$       B)  $a_n = 11 \cdot 2^{n-1}$

9) Consider the first six terms of this sequence:

$$3, 6, 12, 24, 48, 96, \dots$$

What would be the 19th term of this sequence?

- A) 393,216      B) 1,162,261,467  
C) 786,432      D) 1,572,864

10) Write an explicit formula for the sequence 7, 2, -3, -8, -13, .... Then find  $a_{14}$

- A)  $a_n = -5n + 7$ ; -58      B)  $a_n = -5n + 12$ ; -58  
C)  $a_n = -5n + 7$ ; -63      D)  $a_n = -5n + 12$ ; -53