

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Write out the first five terms of the sequence.

- 1) $\{s_n\} = \{n - 3\}$ 1) _____
 A) $s_1 = 3, s_2 = 6, s_3 = 9, s_4 = 12, s_5 = 15$ B) $s_1 = -2, s_2 = -1, s_3 = 0, s_4 = 1, s_5 = 2$
 C) $s_1 = -2, s_2 = -1, s_3 = 0, s_4 = 1, s_5 = 2$ D) $s_1 = -3, s_2 = -2, s_3 = -1, s_4 = 0, s_5 = 1$
- 2) $\{s_n\} = \{2n - 2\}$ 2) _____
 A) $s_1 = 0, s_2 = 1, s_3 = 2, s_4 = 3, s_5 = 4$ B) $s_1 = 0, s_2 = 2, s_3 = 4, s_4 = 6, s_5 = 8$
 C) $s_1 = 0, s_2 = -2, s_3 = -4, s_4 = -6, s_5 = -8$ D) $s_1 = 4, s_2 = 6, s_3 = 8, s_4 = 10, s_5 = 12$
- 3) $\{s_n\} = \{n^2 - n\}$ 3) _____
 A) $s_1 = 0, s_2 = 3, s_3 = 8, s_4 = 15, s_5 = 24$ B) $s_1 = 1, s_2 = 4, s_3 = 9, s_4 = 16, s_5 = 25$
 C) $s_1 = 0, s_2 = 2, s_3 = 6, s_4 = 12, s_5 = 20$ D) $s_1 = 2, s_2 = 6, s_3 = 12, s_4 = 20, s_5 = 30$

Find the n th term and the indicated term of the arithmetic sequence $\{a_n\}$ whose initial term, a , and common difference, d , are given.

- 4) $a_1 = 7; d = 3$ 4) _____
 $a_n = ?; a_{14} = ?$
 A) $a_n = 7 + 3n; a_{14} = 46$ B) $a_n = 4 - 3n; a_{14} = 46$
 C) $a_n = 4 + 3n; a_{14} = 46$ D) $a_n = 4 + 3n; a_{14} = 22$
- 5) $a_1 = 91; d = -7$ 5) _____
 $a_n = ?; a_7 = ?$
 A) $a_n = 98 - 7n; a_7 = 7$ B) $a_n = 91 - 7n; a_7 = 7$
 C) $a_n = 98 - 7n; a_7 = 49$ D) $a_n = 91 - 7n; a_7 = 49$
- 6) $a_1 = 7; d = -7$ 6) _____
 $a_n = ?; a_{15} = ?$
 A) $a_n = 7 - 7n; a_{15} = -91$ B) $a_n = 14 - 7n; a_{15} = -91$
 C) $a_n = 14 - 7n; a_{15} = -42$ D) $a_n = 14 + 7n; a_{15} = -91$

Find the first term, the common difference, and give a recursive formula for the arithmetic sequence.

- 7) 6th term is 27; 15th term is -63 7) _____
 A) $a_1 = 77, d = -10, a_n = a_{n-1} - 10$ B) $a_1 = 77, d = 10, a_n = a_{n-1} + 10$
 C) $a_1 = 87, d = 10, a_n = a_{n-1} + 10$ D) $a_1 = 87, d = -10, a_n = a_{n-1} - 10$
- 8) 6th term is -2; 14th term is -18 8) _____
 A) $a_1 = 10, d = 2, a_n = a_{n-1} + 2$ B) $a_1 = 10, d = -2, a_n = a_{n-1} - 2$
 C) $a_1 = 8, d = -2, a_n = a_{n-1} - 2$ D) $a_1 = 8, d = 2, a_n = a_{n-1} + 2$

9) 9th term is 68; 16th term is 131

A) $a_1 = -13, d = 9, a_n = a_{n-1} + 9$

C) $a_1 = -13, d = 9, a_n = a_{n-1} - 9$

B) $a_1 = -4, d = 9, a_n = a_{n-1} - 9$

D) $a_1 = -4, d = 9, a_n = a_{n-1} + 9$

9) _____

Find the fifth term and the nth term of the geometric sequence whose initial term, a, and common ratio, r, are given.

10) $a = 4; r = 3$

A) $a_5 = 324; a_n = 4 \cdot (3)^{n-1}$

C) $a_5 = 324; a_n = 4 \cdot (3)^n$

B) $a_5 = 972; a_n = 4 \cdot (3)^n$

D) $a_5 = 972; a_n = 4 \cdot (3)^{n-1}$

10) _____

11) $a = 8; r = \frac{1}{5}$

A) $a_5 = \frac{8}{3125}; a_n = 8 \cdot \left(\frac{1}{5}\right)^{n-1}$

C) $a_5 = \frac{8}{625}; a_n = 8 \cdot \left(\frac{1}{5}\right)^n$

B) $a_5 = \frac{8}{3125}; a_n = 8 \cdot \left(\frac{1}{5}\right)^n$

D) $a_5 = \frac{8}{625}; a_n = 8 \cdot \left(\frac{1}{5}\right)^{n-1}$

11) _____

12) $a = 5; r = -2$

A) $a_5 = 80; a_n = 5 \cdot (-2)^{n-1}$

C) $a_5 = 80; a_n = 5 \cdot (-2)^n$

B) $a_5 = -40; a_n = 5 \cdot (-2)^{n-1}$

D) $a_5 = -40; a_n = 5 \cdot (-2)^n$

12) _____

13) $a = -8; r = -5$

A) $a_5 = 1000; a_n = -8 \cdot (-5)^n$

C) $a_5 = 1000; a_n = -8 \cdot (-5)^{n-1}$

B) $a_5 = -5000; a_n = -8 \cdot (-5)^{n-1}$

D) $a_5 = -5000; a_n = -8 \cdot (-5)^n$

13) _____

Find the nth term $\{a_n\}$ of the geometric sequence. When given, r is the common ratio.

14) $2, 1, \frac{1}{2}, \frac{1}{4}, \dots$

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

B) $a_n = 2 \left(\frac{1}{4}\right)^{n-1}$

C) $a_n = 2 \left(\frac{1}{2}\right)^{n-1}$

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

14) _____

15) $8, 24, 72, 216, 648, \dots$

A) $a_n = a_1 + 3^n$

B) $a_n = 8 \cdot 3^n$

C) $a_n = 8 \cdot 3^{n-1}$

D) $a_n = 8 \cdot 3n$

15) _____

16) $2, -6, 18, -54, 162, \dots$

A) $a_n = a_1 - 3^n$

B) $a_n = 2 \cdot (-3)^n$

C) $a_n = 2 \cdot (-3)^{n-1}$

D) $a_n = 2 \cdot (-3)^n$

16) _____

Answer Key

Testname: 1314 TEST 5 FILE

- 1) B
- 2) B
- 3) C
- 4) C
- 5) C
- 6) B
- 7) A
- 8) C
- 9) D
- 10) A
- 11) D
- 12) A
- 13) B
- 14) C
- 15) C
- 16) C