

The  $n$ th term of a sequence is given. Write the first four terms of the sequence.

- 1)  $a_n = n(n^3 - 8)$  1) \_\_\_\_\_  
A) -6, 2, 22, 60 B) -7, 0, 57, 224

The  $n$ th term of a sequence is given. Find the indicated term.

- 2)  $a_n = \frac{3}{n} - 1$ ;  $a_{10}$  2) \_\_\_\_\_  
A)  $\frac{13}{10}$  B)  $-\frac{7}{10}$

Determine whether the sequence is arithmetic. If so, find the common difference.

- 3) -3, -5, -7, -9, ... 3) \_\_\_\_\_  
A) arithmetic;  $d = -2$  B) arithmetic;  $d = -5$

Write the first four terms of the arithmetic sequence with the given first term and common difference.

- 4)  $a_1 = 6$ ,  $d = -9$  4) \_\_\_\_\_  
A) 6, 15, 24, 33 B) 6, -3, -12, -21

Write a recursive formula to define the sequence.

- 5)  $a_1 = 2$ ,  $d = 7$  5) \_\_\_\_\_  
A)  $a_1 = 2$  and  $a_n = 7a_{n-1}$  for  $n \geq 2$  B)  $a_1 = 2$  and  $a_n = a_{n-1} + 7$  for  $n \geq 2$

Find the number of terms of the finite arithmetic sequence.

- 6) 8, 14, 20, 26, ..., 362 6) \_\_\_\_\_  
A) 59 B) 60 C) 61 D) 62

Find the sum.

- 7)  $1 + 2.7 + 4.4 + 6.1 + \dots + 46.9$  7) \_\_\_\_\_  
A) 670.6 B) 61.1 C) 305.5 D) 674

Determine whether the sequence is geometric. If so, find the value of  $r$ .

- 8) 3, -6, 12, -24, ... 8) \_\_\_\_\_  
A) not geometric B) geometric;  $r = 3$   
C) geometric;  $r = -9$  D) geometric;  $r = -2$

**Write the first five terms of the geometric sequence.**

9) Write the first five terms of the geometric sequence.

9) \_\_\_\_\_

$$a_1 = 3, r = -1$$

A) -1, -3, -9, -27, -81

B) 3, -3, 3, -3, 3

**Find  $a_1$  and  $r$  for a geometric sequence  $\{a_n\}$  from the given information.**

10)  $a_2 = 18$  and  $a_7 = 4,374$

10) \_\_\_\_\_

A)  $a_1 = 6$  and  $r = 3$

B)  $a_1 = 18$  and  $r = 12$

**Find the sum of the geometric series, if possible.**

11)  $\sum_{n=1}^8 6\left(\frac{1}{4}\right)^{n-1}$

11) \_\_\_\_\_

A) 8

B) 31

C)  $\frac{65535}{8192}$

D) 12

12)  $\sum_{n=1}^{\infty} \left(\frac{2}{3}\right)^{n-1}$

12) \_\_\_\_\_

A) 3

B) 2

**Expand the binomial by using the binomial theorem.**

13)  $(x^4 + y)^6$

13) \_\_\_\_\_

A)  $x^{24} + 6x^{20}y + 15x^{16}y^2 + 20x^{12}y^3 + 15x^8y^4 + 6x^4y^5 + y^6$

B)  $x^{24} + y^6$

**Find the indicated term of the binomial expansion.**

14)  $(2r + s^2)^{10}$ ; eighth term

14) \_\_\_\_\_

A)  $960r^3s^{14}$

B)  $90r^2s^8$

Answer Key

Testname: Q&A\_05

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