

4.3.D3 ~ Terms of a Sequence

Past due on _____ Period _____

Determine whether each given sequence is arithmetic, geometric, or neither. For arithmetic and geometric sequences, write the next 3 terms of the sequence.

1) $-18, -13, -8, -3, 2, \dots$

2) $2, 4, 12, 48, 240, \dots$

3) $3, -6, 12, -24, 48, \dots$

4) $-2, -12, -22, -32, -42, \dots$

Write the explicit formula of the arithmetic sequence. Then use the explicit formula to determine the 52nd. term of the sequence. Refer to the 4.3 example "Writing Explicit Formulas for Arithmetic & Geometric Sequences" in the Chapter 4 Summary.

5) $-15, -6, 3, 12, \dots$

6) $8, 2, -4, -10, \dots$

7) $a_1 = -21, d = -10$

8) $a_1 = 27, d = 3$

Write the explicit formula of the geometric sequence. Then use the explicit formula to determine the 8th term of the sequence. Refer to the 4.3 example "Writing Explicit Formulas for Arithmetic & Geometric Sequences" in the Chapter 4 Summary.

9) $-4, -8, -16, -32, \dots$

10) $-3, 15, -75, 375, \dots$

11) $a_1 = -1, r = 4$

12) $a_1 = -3, r = -3$

Determine whether the sequence is arithmetic or geometric. Then write the recursive formula for each sequence. Refer to the 4.3 example "Writing Recursive Formulas for Arithmetic & Geometric Sequences" in the Chapter 4 Summary.

13) 31, 38, 45, 52, 59, ...

14) 1, 5, 25, 125, 625, ...

15) 3, -6, 12, -24, 48, ...

16) -13, -16, -19, -22, -25, ...

Write a system of linear INEQUALITIES that represents the problem situation. Refer to the 7.2 example "Writing a System of Linear Inequalities" in the Chapter 7 Summary.

17) A company print flyers and brochures. It takes 2 minutes to print a flyer and 4 minutes to print a brochure. Each flyer uses 12 ounces of ink and each brochure uses 9 ounces of ink. The company has 2 hours (120 minutes) available and 360 ounces of ink.

Let x = the number of flyers and let y = the number of brochures.

18) A company manufactures 15" laptops and 17" laptops. It takes 3 hours to manufacture a 15" laptop and 5 hours to manufacture a 17" laptop. Each 15" laptop has 256 GB of memory and each 17" laptop has 512 GB of memory. The company has 480 hours available and parts for 43,520 GB of memory.

Let x = the number of 15" laptops and let y = the number of 17" laptops.

19) A new business is hiring managers and employees. A total of at least 400 people must be hired. The company needs at least 20 managers and no more than 500 employees. (This system has 3 inequalities.)

Let x = the number of managers and let y = the number of employees.

20) A company produces CDs and DVDs. A total of at most 20,000 items are produced each day. There is an expected demand of at least 5000 CDs and 8000 DVDs each day. (This system has 3 inequalities.)

Let x = the number of CDs and let y = the number of DVDs.