

Chapter 8 Lesson 2: Function Rules

Sequence: is a list of numbers in a specific order.

Term: each number in the list of the sequence.

Arithmetic sequence: can be found by ADDING the same number to the previous term.

Geometric sequence: can be found by MULTIPLYING the previous term by the same number.

EXAMPLES:

- 1.) Describe the relationship between the terms in the arithmetic sequence 0, 15, 30, 45.....Then write the next three terms.

Describe: EACH TERM IS FOUND BY ADDING 15 TO THE PREVIOUS TERM.

Next three terms: 60, 75, 90

- 2.) Describe the relationship between the terms in the geometric sequence 1, 3, 9, 27.....Then write the next three terms.

multiply 3

81, 243, 729

A sequence can also be shown in a table. The table gives both the position of each term in the list and the value of the term.

List

8, 16, 24, 32....

Table

Position	1	2	3	4
Value of Term	8	16	24	32

Note: The value of each term is 8 times the position.

You can write an ALGEBRAIC EXPRESSION to describe the sequence. The value of each term can be described as a function of its position in the sequence. (Position can be considered the INPUT and the value of the term as the OUTPUT.)

Position	1	2	3	4	n
Value of Term	8	16	24	32	8n

Examples: Use words and symbols to describe the value of each term as a function of its position. Then find the value of the eighth term.

Words: multiply by 6

Symbols: $6n$

Eighth term: 48

Position	2	3	4	5	N
Value of Term	12	18	24	30	

Words: add 4

Symbols: $n+4$

Eighth term: 12

Position	3	4	5	6	N
Value of Term	7	8	9	10	

Determine how the next term in each sequence can be found. Then find the next two terms in the sequence.

4, 16, 28, 40 add 12; 52, 64

1.5, 3.9, 6.3, 8.7, add 2.4; 11.1, 13.5

$2\frac{1}{4}, 2\frac{3}{4}, 3\frac{1}{4}, 3\frac{3}{4}, \dots$ add $\frac{1}{2}$; $4\frac{1}{4}, 4\frac{3}{4}$

Find the missing number in each sequence.

30, 24.5, 19, $13\frac{1}{2}$,

43.8, 36.7, 29.6, 22.5,