

Math 6**Worksheet 2**

NAME _____

DATE : _____

SECTION : _____

SCORE : _____

Formulates the rule in finding the nth term using different strategies (looking for a pattern, guessing and checking, working backwards) e.g. 4,7,13,16,...n (the nth term is $3n+1$ M6AL-IIIId-7

MONDAY

A list of number arranged in a row is called a number sequence. Each number in a sequence is called a term. A sequence is an enumerated collection of objects (usually numbers) that follow a certain pattern or rule. The "nth term" is a formula that enables you to find the next term in a sequence.

Example 1,

In the sequence 4,7,10,13... find the 7th term. Notice that the terms of the sequence have a constant difference of 3, thus it can be guessed that the term contains $3n$. And based from the 0th term must be 1, hence, the nth term is $3n+1$

1st term----- $3(1) + 1 = 4$

5th term ----- $3(5) + 1 =$

2nd term----- $3(2) + 1 = 7$

6th term ----- $3(6) + 1 = 19$

3rd term ----- $3(3) + 1 = 10$

7th term----- $3(7) + 1 = 22$

4th term ----- $3(4) + 1 = 13$

The 7th term then is 22.Example 2. **Fibonacci Sequence** 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...

The Fibonacci Sequence is found by adding the two numbers before it together.

The number 2 is found by adding the two numbers before it (1+ 1).

The number 21 is found by adding the two numbers before it (8+13).

The next number in the sequence above would be 55 (21+34).

Example 3. **Square Numbers** 1, 4, 9, 16, 25, 36, 49...

They are the squares of counting/whole numbers 1, 2, 3, 4, 5, 6, 7, 8.

$1 \times 1 = 1$

$5 \times 5 = 25$

$2 \times 2 = 4$

$6 \times 6 = 36$

$3 \times 3 = 9$

$7 \times 7 = 49$

$4 \times 4 = 16$

$8 \times 8 = 64$

Example 4. **Cube Numbers.** They are the cubes of counting numbers 1, 2, 3, 4, 5.

$1 \times 1 \times 1 = 1$

$2 \times 2 \times 2 = 8$

$3 \times 3 \times 3 = 27$

$4 \times 4 \times 4 = 64$

$5 \times 5 \times 5 = 125$ Can you figure out the next few numbers?

Directions: Study each sequence and write the next two missing terms

1. 3, 7, 11, 15, 19, _____, _____

2. 4, 7, 13, 25, _____, _____

3. 16, 25, 36, 49, _____, _____

4. 3, 7, 15, 31, _____, _____

5. 9, 18, 27, 36, 45, _____, _____

TUESDAY**Directions:** Write the rule used for each sequence, then write the missing number.

1. 1, 6, 11, 16, 21 _____

Rule : _____

2. 5, 9, 13, 17, 21 _____

Rule : _____

3. 8, 16, 24, 32, 40 _____

Rule : _____

4. 4, 12, 20, 28, 32 _____

Rule : _____

5. 23, 19, 15, 11, 7 _____

Rule : _____

WEDNESDAY**Differentiates expression from equation . M6AL-IIIId-15****Algebraic equation-** gives a complete information because of the relation symbol (=)Examples: $3n = 21$, $x + 7 = 13$, Twice the sum of a number and 9 is 36.**Algebraic expression-** does not give a complete information for it has no answer and no relation symbol

Directions: Analyze each number sentence and write expression or equation on the space provided for.

- _____ 1. 34 more than a number
- _____ 2. $5 \times 6 + (9 \div 3)$
- _____ 3. $5N = 625$
- _____ 4. A Number $- 12$
- _____ 5. The product of a number and 8 is 56.

THURSDAY

Directions: Put expression or equation before the number then Match column A with column B.

- | A | B |
|--|-----------------------|
| _____ 1. a increased by b | a. $6 \times d = 12$ |
| _____ 2. the difference between x and y | b. $x^2 - y$ |
| _____ 3. three times k minus l | c. $(3 \times k) - l$ |
| _____ 4. the product of 6 and d is 12 | d. $a + b$ |
| _____ 5. the square of x diminished by y | e. $x - y$ |

FRIDAY

- 1. What formula is derived in finding the sequence 4, 12, 20, 28, 36 ?
A. $n+8 - 4$ B. $8 \times n + 4$ C. $8n - 4$ D. $4 + 8$
- 2. What will be the 100th term for the sequence 5, 11, 17, 23, 29.....?
A. 599 B. 600 C. 400 D. 499
- 3. Which of the following is an equation?
A. $10 + 9$ B. $0.5+0.2 = 0.4 + 0.3$ C. $25 \times 5 + 6$ D. $(8 + 9) \times 15$
- 4. The square of 3 diminished by 8 is 1, what is the numerical translation?
A. $3^2 - 8 = 1$ B. $2^3 - 8 = 1$ C. $3 \times 8 = 24$ D. $3^3 - 8 = 1$
- 5. If thrice a number is increased by 11, the result is 35. What is the equation for the problem?
A. $n + 11 = 35$ B. $3 + n = 11$ C. $3n + 11 = 35$ D. $2n + 12 = 35$