LEARNING AS ONE NATION
Expanded Project
L E A R N I N G A C T I V I T Y

Math 10_4

Name: _____ **Grade/Score:** _____
Year and Section: _____ **Date:** _____

Subject *(Check or choose from below.)*_____
- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH

Type of Activity *(Check or choose from below.)*_____
- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Laboratory Report
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: Finding the *nth* Term of an Arithmetic Sequence

Learning Target: To find the *nth* term of an arithmetic sequence.

References: *(Author, Title, Pages)*
1) F. B. Orines, et al., Next Century Mathematics, pp. 18-23
2) V. G. Baja and M. V. Bernido, CVIF Learning Activities

An arithmetic sequence may be written as,

$$a_1 + a_2 + a_3 + . . . + a_n$$

where *n* is an integer that tells us the position of each term in the sequence.

To find the *nth* term of an arithmetic sequence, we use the equation,

$$\boxed{a_n = a_1 + (n-1)d}$$

where,

$\boldsymbol{a_1}$ is the first term,

$\boldsymbol{n}$ is the number of terms, and

$\boldsymbol{d}$ is the common difference between consecutive terms.

Example:

Write the 5th term of the descending arithmetic sequence 7, 3, -1, -5,...

Solution:

The first term in the sequence is **7**, and the common difference is d = **-4**. Therefore, we can get the **5th** term of the sequence by using the equation $a_n = a_1 + (n-1)d$. Let us substitute the values we know, so we have,

$$a_n = a_1 + (n-1)d$$
$$a_5 = 7 + (5-1)(-4)$$
$$a_5 = 7 + (4)(-4)$$
$$a_5 = 7 + (-16)$$
$$\boldsymbol{a_5 = -9}\text{, which is the fifth term.}$$

Therefore, we have the series, (7, 3, -1, -5, -9).

Exercises: Find the *10th* term in the following sequences.

a) 4, 17, 30, 43,...

b) -2.5, 2.5, 7.5, 12.5,...