10

MATHEMATICS

Quarter 1 - Module 1:
Arithmetic Sequence

AIRs - LM

Quarter 1 - Module 1: Arithmetic Sequence
Second Edition, 2021

Development Team of the Module

Author: Rhonavi Q. Masangkay
Editor: SDO La Union, Learning Resource Quality Assurance Team
Illustrators: Ernesto F. Ramos, Jr.
Christian R. Bumatay
Content Reviewer: Marites W. Tarnate
Language Reviewer: Rustico G. Diaz
Design and Layout: Mark Jesus M. Mulato

Management Team:

ATTY. Donato D. Balderas, Jr.
Schools Division Superintendent
Vivian Luz S. Pagatpatan, Ph.D
Assistant Schools Division Superintendent
German E. Flora, Ph.D, *CID Chief*
Virgilio C. Boado, Ph.D, *EPS in Charge of LRMS*
Erlinda M. Dela Peña, Ph.D, *EPS in Charge of Mathematics*
Michael Jason D. Morales, *PDO II*
Claire P. Toluyen, *Librarian II*

Printed in the Philippines by: _____

Department of Education – SDO La Union
Office Address: Flores St. Catbangen, San Fernando City, La Union
Telefax: 072 – 205 – 0046
Email Address: launion@deped.gov.ph

10

MATHEMATICS

Quarter 1 - Module 1:
Arithmetic Sequence

DepED
DEPARTMENT OF EDUCATION

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

Target

Grade 10 Mathematics contains interesting and relatable lessons. You will be dealing with topics on Algebra, Geometry, Probability and Statistics for the school year. The learning you had in the previous grade levels will all be useful as you go through each lesson for this subject.

To start with, patterns and sequences will be introduced in this module. You will be exploring fascinating patterns in mathematics especially on numbers. You will be predicting what came before and what might come next after a given set of numbers that are arranged in a particular order.

In this module, you will learn to:

1. generate patterns. **(M10AL-Ia-1)**
2. illustrate an arithmetic sequence **(M10AL-Ib-1)**
3. determine arithmetic means, nth term of an arithmetic sequence and sum of the terms of a given arithmetic sequence.

At the end of this module, you are expected to:

1. determine the next terms of a given sequence;
2. identify an arithmetic sequence;
3. write the general term of an arithmetic sequence;
4. solve for the arithmetic means, and;
5. compute for the arithmetic series.

Let us find out how much you already know about this module. Answer the pre-assessment in a separate sheet of paper.

PRE-ASSESSMENT

Directions: Choose the letter of the correct answer. Write your answer on a separate sheet of paper. Take note of the items that you were not able to answer correctly and find the right answer as you go through this module.

1. Which of the following set of numbers shows a pattern?
   A. {2,-4,8,-16,20} B. {2,3,5,6,9,12} C. {3,8,12,16,24} D. {2,2,3,5,8}
2. What are the next two numbers in the sequence 49, 64, 81, 100, 121, 144, ____, ____?
   A. 291, 326 B. 258, 291 C. 225, 256 D. 169, 196
3. What is the next term in the sequence 4, 7, 10, 13, 16, 19, ...?
   A. 21 B. 22 C. 23 D. 24
4. What type of sequence is illustrated when the terms have a common difference?
   A. arithmetic B. Fibonacci C. geometric D. harmonic
5. How do you call the numbers between two given terms of an arithmetic sequence?
   A. common difference B. general term C. means D. series
6. Which of the following terms refer to the sum of the terms of a given arithmetic sequence?
   A. common difference B. general term C. means D. series
7. Which of the following illustrates an arithmetic sequence?
   A. 1, 2, 3, 5, ... B. 1, 4, 9, 16, ... C. 2, 4, 8, 16, ... D. 3, 7, 11, 15,...
8. Which of the following is the common difference in the sequence; -4, 1, 6, 11, 16... ?
   A. 2 B. 3 C. 4 D. 5
9. Which of the following numbers is the 10^{th} term of the sequence with its nth term or general term as a_n= 2n+3?
   A. 21 B. 22 C. 23 D. 24
10. Which of the following equation is the nth term or general term of the sequence -4, 2, 8, 14, 20, ...?
    A. a_n= 4n-8 B. a_n= n -14 C. a_n= 6n – 10 D. a_n= -7n+16
11. What is the 17^{th} term of the arithmetic sequence -19, -15, -11, ... ?
    A. -128 B. -45 C. 45 D. 128
12. What is the arithmetic mean between 10 and 50?
    A. 15 B. 20 C. 25 D. 30
13. If three arithmetic means are inserted between -14 and -2, what are the terms?
    A. -12, -10, -8 B. -11,-8, -5 C. -10, -7, -4 D. -10, -6, -2
14. What is the sum of the first 5 terms of the arithmetic sequence whose first term is -18 and last term is -6?
    A. -60 B. -54 C. 54 D. 60
15. What is the sum of the first 10 terms of the arithmetic sequence 4, 12, 20,..?
    A. 360 B. 400 C. 420 D. 484

Lesson 1 Arithmetic Sequence

In this lesson, you will study set of number and identify its pattern. You will also be introduced with the first type of sequence, the arithmetic sequence. Find out how you may be able to identify an arithmetic sequence from a given set of sequences.

Jumpstart

Activity 1: Okay! Next!

Identify the pattern of each sequence then find the next three terms of each sequence.

1. A, B, C, E, F, G, ___, ___, ___
2. 1, 4, 9, 16, 25, ___, ___, ___
3. 2, 5, 8, 11, 14, ___, ___, ___
4. 74, 69, 64, 59, ___, ___, ___
5. 1, 4, 16, 64, ___, ___, ___
6. 128, 64, 32, 16, ___, ___, ___
7. -10, -19, -28, -37, -46, ___, ___, ___
8. 13, 7, 1, -5, ___, ___, ___
9. -5, 15, -45, 135, ___, ___, ___
10. 2, 3, 5, 8, 13, 21, ___, ___, ___

Discover

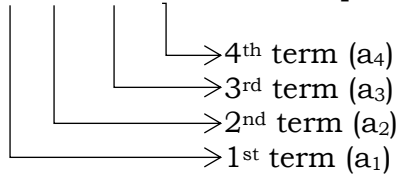
The activity above shows set of numbers or terms that are arranged in a definite order. For you to identify the next terms, patterns should be determined first.

Sequence

A sequence is a list of objects or numbers arranged in a definite order.

Example:

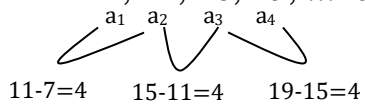
7, 11, 15, 19, ... is a sequence. The pattern is adding 4 to each term.



Arithmetic Sequence

An arithmetic sequence is a sequence whose consecutive terms have a common difference. The common difference (d) is identified by subtracting the term by its previous term.

7, 11, 15, 19, … is an arithmetic sequence with a common difference of 4.



Example:

Determine whether the sequence is an arithmetic sequence or not by finding its common difference. Then, find its next three terms.

A. Sequence: 4, 10, 16, 22, …
Checking for common difference:
10 – 4 = 6
16 – 10 = 6
22 – 16 = 6

The sequence 4, 10, 16, 22, … have a common difference of 6, therefore, it is an arithmetic sequence. The next three terms of the sequence are 28, 34, 40.

B. Sequence: 17, 19, 21, 24, 26,…
Checking for common difference:
19 – 17 = 2
21 – 19 = 2
24 – 21 = 3
26 – 24 = 2

The sequence 17, 19, 21, 24, 26,… do not have a common difference, therefore, it is NOT an arithmetic sequence.

C. Sequence: 5, 2, -1, -4 ,…
Checking for common difference:
2 – 5 = (- 3)
(- 1) – 2 = (- 3)
(- 4) – (- 1) = (- 3)

The sequence 5, 2, -1, -4 ,… have a common difference of - 3, therefore, it is an arithmetic sequence. The next three terms of the sequence are -7, -10, -13.

Nth Term of an Arithmetic Sequence

The nth term of an arithmetic sequence is also called its **general term**. It is determined by using the formula

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

where:

$$a_n = n^{th}\ term$$
$$a_1 = first\ term$$
$$n = number\ of\ terms$$
$$d = common\ difference$$

Examples:

1. Write the general term of the arithmetic sequence 7, 11, 15, 19, …

Step 1: Identify the **first term (a_1)** and the **common difference (d)** of the arithmetic sequence.

In the sequence 7, 11, 15, 19, … the first term is 7 and the common difference is 4. Therefore **a_1=7** and **d=4**.

Step 2: Substitute the values in step 1 to the formula $a_n=a_1+(n-1)d$. Then simplify.

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

$a_n = \mathbf{7} + (n-1)\mathbf{4}$ — Substitute a_1=7 and d=4.

$a_n = 7 + 4n - 4$ — Multiply the common difference 4 to the quantity inside the parentheses. (n-1)4=4n-4

$a_n = 4n - 4 + 7$ — Evaluate -4+7.

$\boldsymbol{a_n = 4n + 3}$

The general term of the sequence 7, 11, 15, 19, … is $a_n = 4n + 3$.

2. Write the general term of the arithmetic sequence -5, -7, -9, -11, …

Step 1: Identify the **first term (a_1)** and the **common difference (d)** of the arithmetic sequence.

In the sequence -5, -7, -9, -11, … the first term is -5 and the common difference is -2. Therefore $\mathbf{a_1=-5}$ and $\boldsymbol{d=-2}$.

Step 2: Substitute the values in step 1 to the formula $a_n=a_1+(n-1)d$. Then simplify.

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

$a_n = \mathbf{-5} + (n-1)(\mathbf{-2})$ — Substitute a_1=-5 and d=-2.

$a_n = -5 - 2n + 2$ — Multiply the common difference -2 to the quantity inside the parentheses. (n-1)(-2)=-2n+2

$a_n = -2n + 2 - 5$ — Evaluate 2-5.

$\boldsymbol{a_n = -2n - 3}$

The general term of the sequence -5, -7, -9, -11, … is $a_n=-2n-3$.

3. Solve for the 8th term of the arithmetic sequence 7, 11, 15, 19, …

Step 1: Identify the **first term (a_1)** , the **common difference (d)** of the arithmetic sequence. Also, determine the term to be solved **(n)**.

In the sequence 7, 11, 15, 19, … the first term is 7 and the common difference is 4. The term to be solved is the 8th term. Therefore $\mathbf{a_1=7}$, $\boldsymbol{d=4}$, and $\mathbf{n=8}$

Step 2: Substitute the values in step 1 to the formula $a_n=a_1+(n-1)d$. Then simplify.

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

$a_8 = \mathbf{7} + (8-1)\mathbf{4}$ — Substitute a_1=7, d=4, and n=8.

$a_8 = 7 + (7)4$ — Simplify the quantity inside the parenthesis. (8-1)=7

$a_8 = 7 + 28$ — Multiply. (7)4=28

Evaluate. 7+28=35

$\boldsymbol{a_8 = 35}$

The 8th term of the sequence 7, 11, 15, 19, … is 35.

Try checking by adding the common difference of 4 until the 8th term is reached. (7, 11, 15, 19, 23, 27, 31, 35)

4. Solve for the 50th term of the arithmetic sequence -5, -7, -9, -11, …

Step 1: Identify the **first term (a_1)** and the **common difference (d)** of the arithmetic sequence. Also, determine the term to be solved **(n)**.

In the sequence -5, -7, -9, -11, … the first term is -5 and the common difference is -2. The term to be solved is the 50th term. Therefore **a_1=-5** , **d=-2** and **n=50**.

Step 2: Substitute the values in step 1 to the formula $a_n=a_1+(n-1)d$. Then simplify.

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

$a_{50} = \boldsymbol{-5} + (50-1)(\boldsymbol{-2})$ — Substitute a_1=-5, d=-2, and n=50.

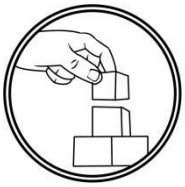
$a_{50} = -5 + (49)(-2)$ — Simplify the quantity inside the parenthesis. (50-1)=49

$a_{50} = -5 - 98$ — Multiply. (49)(-2) =-98

Evaluate. -5-98=-103

$\boldsymbol{a_{50} = -103}$

The 50th term of the sequence -5, -7, -9, -11, … is −103.



Explore

The next activities will help you practice the concepts and skills that you have learned in our discussion.

Activity 2: Am I an Arithmetic?

Instruction: Determine which of the following illustrate arithmetic sequence. Write **AS** for sequences which are arithmetic and **X** for NOT arithmetic.

_____ 1. 3, 4, 7, 11, 18, ...
_____ 2. 10, 15, 20, 25, 30, ...
_____ 3. 11, 9, 7, 5, 3, ...
_____ 4. -5, -3, -1, 1, ...
_____ 5. 7, -7, 7, -7
_____ 6. 21, 2, -17, ...
_____ 7. -6, -1, 4, ...
_____ 8. 3, -6, 12, -24, ...
_____ 9. -4, 1, 6, 11, ...
_____ 10. 128, 64, 32, 16, ...

Activity 3: Guided by the General

A. Write the general term of each arithmetic sequence by completing the steps given.

1. 9, 17, 25, 33, …

$a_n = a_1 + (n-1)d$
$a_n = \_\_\_\_ + (n-1)(8)$
$a_n = 9 + \_\_\_\_ - 8$
$a_n = \_\_\_\_ + 9 - 8$
General Term: $a_n = \_\_\_\_ + \_\_\_\_$

2. 45, 39, 33, 27, …

$a_n = a_1 + (n-1)d$
$a_n = \_\_\_\_ + (n-1)(\_\_\_\_)$
$a_n = \_\_\_\_ - \_\_\_\_ + \_\_\_\_$
$a_n = \_\_\_\_ + 45 + \_\_\_\_$
General Term: $a_n = \_\_\_\_ + \_\_\_\_$

B. Solve for the indicated term of each arithmetic sequence by completing the steps given.

3. In the arithmetic sequence 12, 18, 24, 30, … Find the 46th term.
   a. Given:
      a_1= _____ d=_____
      n=_____
   b. Solution:
      $a_n = a_1 + (n-1)\ d$
      a_{46}= _____ +(46-1)_____
      a_{46}= _____ +(_____)6
      a_{46}= 12 + _____
      a_{46}=_____

4. In the arithmetic sequence -15, -10, -5, 0, … Find the 25th term.
   a. Given:
      a_1= _____ d=_____
      n=_____
   b. Solution:
      $a_n = a_1 + (n-1)\ d$
      a_{25}= _____ +(25-1)_____
      a_{25}= _____ +(_____)5
      a_{25}= -15 + _____
      a_{25}=_____

Deepen

Activity 4: Work it out!

Instruction: Solve for the following systematically.

1. Identify the next five terms of the sequence 2, 3, 5, 8, 12, …, then describe its pattern.
2. Solve for the first three terms of the sequence whose general term is $a_n=n^2-5$.
3. Write the general term of the sequence 5, 1, -3, -7, …
4. Solve for the 20^{th} term of the sequence whose general term is given by $a_n=7-3n$.
5. Solve for the 27^{th} term of the sequence -11, -6, -1, 4, …

Lesson 2 Arithmetic Means and Arithmetic Series

Sequence was introduced in the previous lesson and it specifically discussed the first type of sequence, the arithmetic sequence. Particularly, it illustrated how to determine an arithmetic sequence, determine its nth term and its general term.

Jumpstart

For this activity, you are going to recall the basic concepts that you have learned on arithmetic sequence. You may refer to lesson 1 if you need to have some review first.

Activity 5: Make a Difference

Instruction: Determine the first term and the common difference of each arithmetic sequence.

Arithmetic Sequence	First term (a_1)	Common Difference (d)
1. 9, 17, 25, 33, …		
2. -4, -7, -10, -13, …		
3. -19, -17, -15, -13, …		
4. 45, 39, 33, 27, …		
5. $1, \frac{3}{2}, 2, \frac{5}{2}, \ldots$		

Discover

You have learned previously how to determine an arithmetic sequence. Basically, you just need to identify whether the terms of the given sequence have a common difference. In this section, you will be learning more about arithmetic sequence. In dealing with the topics on arithmetic means and series, it is necessary that you have mastered the skills in identifying the basic properties of an arithmetic sequence, solving for its nth term and writing its general term.

Arithmetic Means

Arithmetic Means are the terms that lie between two nonconsecutive terms of an arithmetic sequence.

Examples:

1. In the arithmetic sequence 6, 10, 14, 18 we can observe that 10 and 14 are the terms between 6 and 18. Hence, we can conclude that the two arithmetic means between 6 and 18 are 10 and 14.
2. Find the missing terms that will make the sequence 4, 6, ___, ___, 12 arithmetic.
   Solution:
   4, 6, ___, ___, 12 ⟶ 4, 6, 8, 10, 12

   The given sequence should have a common difference of 2 to make it arithmetic. Therefore the third and the fourth terms are 8 and 10 respectively. Thus, 8 and 10 are the arithmetic means of the sequence.

3. Insert two arithmetic means between 33 and -3.
   In finding the arithmetic means of an arithmetic sequence, you can use the formula for its general term.

Steps to follow in solving arithmetic means:
1. Identify $\mathbf{a_1}$, $\mathbf{a_n}$, and $\boldsymbol{n}$ of the sequence, where a_1= first term, a_n=n^{th} term, and n=number of terms.
2. Substitute the values in step 1 to the formula in solving for the general term of an arithmetic sequence. $\boldsymbol{a_n = a_1 + (n-1)d}$, where d=common difference.
3. Solve for the common difference (**d**).
4. Using the common difference solved in step 3, determine the missing terms/ the arithmetic means by adding it to the first term, and so on.

Solution:

33, ___, ___, -3
a_1 a_2 a_3 a_4 = a_n

Step 1: $\mathbf{a_1 = 33}$
$\mathbf{a_n = -3}$
n=4 (there are 4 terms to complete the sequence)

Step 2: $\boldsymbol{a_n = a_1 + (n-1)d}$
$\boldsymbol{-3 = 33 + (4-1)d}$
Step 3: $-3 = 33 + (3)d$
$-3 - 33 = 3d$
$-36 = 3d$
$\frac{-36}{3} = \frac{3d}{3}$
$\boldsymbol{-12 = d}$
Step 4: $\mathbf{a_2}$= a_1+d = 33+(-12) =**21**
$\mathbf{a_3}$= a_2+d = 21+(-12) =**9**

The missing terms a_2, and a_4 are the arithmetic means of the sequence. Therefore 21 and 9 are the arithmetic means between 33 and -3.

Arithmetic Series

Arithmetic Series is the sum of terms of an arithmetic sequence. To solve the sum of the given terms, the following formulas can be used.

$S_n = \frac{n}{2}(a_1 + a_n)$ (use when the first and last terms, and the number of terms are known)	$S_n = \frac{n}{2}(2a_1 + (n-1)d)$ (use when the first term, number of terms and common difference are given)

where: S_n= sum of the terms a_1= first term
n = number of terms a_n= last term

Examples:

1. Solve for the sum of the first 8 terms of the arithmetic sequence 4, 8, 12, 16, …

   Solution 1:

   a. Complete the 8 terms of the sequence by adding its common difference until the 8th term.

      4, 8, 12, 16, 20, 24, 28, 32 (8 terms of the sequence)

   b. Add all the 8 terms.

      4+8+12+16+20+24+28+32=144

      The sum of the first 8 terms of the arithmetic sequence 4, 8, 12, 16, … is **144**.

   Solution 2:

   a. Use the formula $S_n = \frac{n}{2}(2a_1 + (n-1)d)$, since the first term, number of terms and common difference are given.

      a_1=4, d=4 and n=8 since we are looking for the sum of the first 8 terms of the sequence.

   b. Substitute a_1, d and n to the formula then solve for the sum.

$$S_n = \frac{n}{2}(2a_1 + (n-1)d)$$
$$S_8 = \frac{8}{2}(2(4) + (8-1)4)$$
$$S_8 = \frac{8}{2}(8 + (7)4)$$
$$S_8 = \frac{8}{2}(8 + 28)$$
$$S_8 = \frac{8}{2}(36)$$
$$S_8 = \frac{288}{2}$$
$$\boldsymbol{S_8 = 144}$$

The sum of the first 8 terms of the arithmetic sequence 4, 8, 12, 16, … is **144**.

2. Solve for the sum first 49 terms of the arithmetic sequence whose first term is -100 and last term is -4.

   Solution:

a. Use the formula $\boldsymbol{S_n = \frac{n}{2}(a_1 + a_n)}$ since the first term, last term and the number of terms are given.

a_1=-100 a_n=-4 n=49

b. Substitute a_1, a_n and n in the formula then solve for the sum.

$$S_n = \frac{n}{2}(a_1 + a_n)$$
$$S_{49} = \frac{49}{2}(-100 + (-4))$$
$$S_{49} = \frac{49}{2}(-104)$$
$$S_{49} = \frac{-5096}{2}$$
$$\boldsymbol{S_{49} = -2\,548}$$

The sum of the first 49 terms of the arithmetic sequence whose first term is -100 and last term is -4,
is **-2 548**.

Explore

Let's apply what you have learned by answering the activities that follows.

Activity 6: Term after Term

Instruction: Complete the terms of the sequence to make it an arithmetic sequence. Write your answer on your answer sheet.

1. 15, 18, ____, ____, ____, ____, 33
2. -27, _____, ____, ____, -7, -2
3. 39, ____, 5, -12
4. -15, 5, ____, 45
5. 4, ____, ____, 16
6. 14, ____, 34
7. -8, ____, ____, -14
8. 10, ____, 22, 28, ____
9. ____, -3, 5, ____
10. x, x+2, ____, ____

Activity 7: Sum it up!

Instruction: Solve for the sum of the indicated terms of the arithmetic sequence. Write your answer on your answer sheet.

1. 5, 7, 9, 11, …, S_{20}
2. 21, 15, 9, 3, …, S_8
3. -4, -9, -14, -19, …, S_9
4. -14, -11, -8, -5, …, S_{10}
5. 2x, 3x, 4x, …, S_6

Deepen

Activity 8: Series of Means

Solve for the following systematically.

1. Insert 3 arithmetic means between -32 and 16.
2. Insert 5 arithmetic means between 45 and -21.
3. Solve for the sum of the first 8 terms of the arithmetic sequence -2, 2, 6, …
4. Solve for the sum first 26 terms of the arithmetic sequence whose first term is 7 and last term is 157.
5. Solve for the sum of the first 5 terms of the arithmetic sequence 2x, 3x-2, 4x-4, … .

Gauge

Assessment: Post-Test

Direction: Find out how much have you learned from the lesson. Choose the letter of the correct answer to the question. Write your answer in a separate sheet of paper.

1. What is the next term of the sequence 1, 4, 9, 16, 25, … ?
   A. 30 B. 36 C. 49 D. 64
2. Which of the following are the first three terms of the sequence given by the general term $a_n=n^2-3$?
   A. -2, 1, 3 B. 2, -1, -3 C. -2, 1, 6 D. -2, 1, -6
3. What is the pattern in getting the next term of the sequence 4, -8, 16, -32, …?
   A. multiply by 2 B. add 4 C. multiply by -2 D. add -4
4. What is the common difference of the arithmetic sequence whose first and second terms are 9 and -1 respectively?
   A. -10 B -8 C. 8 D. 10
5. Which of the following are the first three terms of the arithmetic sequence whose general term is $a_n=5-2x$?
   A. 5, 3, 1 B. 1, 2, 3 C. 3, 1, -1 D. 3, 1, 6
6. Which of the following is the first positive term of the arithmetic sequence -14,-11,-8,…?
   A. 1 B. 2 C. 3 D. 4
7. What is the 9^{th} term of the arithmetic sequence whose general term is given by $a_n=3x-37$?
   A. -10 B. -9 C. 9 D. 10

8. What is the 28th term of the arithmetic sequence 5,8,11,14, …?
   A. 80 B. 83 C. 86 D. 89
9. Find the general term for the sequence 5, 9, 13, 17, …
   A. a_n=4n +1 B. a_n=3n+1 C. a_n= 2n+1 D. a_n=n+1
10. Find the general term of a sequence whose a_1= 2 and a_4=14.
   A. a_n=4n-2 B. a_n=3n-2 C. a_n=2n-2 D. a_n=n-2
11. What are the arithmetic means in the sequence 7, __, __, 34?
   A. 15 and 25 B. 15 and 26 C. 16 and 25 D. 16 and 26
12. If two arithmetic means are inserted between 8 and -7, what are the terms?
   A. 2 and -4 B. 4 and 0 C. 3 and -1 D. 3 and -2
13. If one arithmetic mean is inserted between 2x+5 and 6x+7, what is the term?
   A. x+1 B. 2x+1 C. 3x+6 D. 4x+6
14. What is the sum of the terms of the arithmetic sequence given by -20, -15, -10, -5, 0, 5, 10, 15?
   A. -20 B. 0 C. 20 D. 80
15. The first term of an arithmetic sequence is 9 and the last term is 53. What is the sum of its first 12 terms?
   A. 124 B. 372 C. 378 D. 744

References

Printed Materials

Callanta,Melvin et al..Mathematics Grade 10 Learner's Module First Edition, Rex Bookstore Inc, 2015.

Stewart, James, et.al .Algebra and Trigonometry.Second Edition.Cengage Learning Asia Pte. Ltd. 2010

Website

http://www.conejousd.org/Portals/49/Departments/Math/Sansing/Math%20AnalyCP/Notes%2012.1%20Arithmetic%20Sequences%20and%20Series.pdf; retrieved August 20, 2021

https://www.alamo.edu/contentassets/afe30946fa58450c89840c1173f3b9d0/sequences/math1314-arithmetic-sequences.pdf; retrieved August 20, 2021

https://amsi.org.au/ESA_Senior_Years/PDF/Sequences1d.pdf; retrieved August 19, 2021

For inquiries or feedback, please write or call:

Department of Education – SDO La Union
Curriculum Implementation Division
Learning Resource Management Section
Flores St. Catbangen, San Fernando City La Union 2500
Telephone: (072) 607 - 8127
Telefax: (072) 205 - 0046
Email Address:
launion@deped.gov.ph
lrm.launion@deped.gov.ph