GRADES 1 to 12 DAILY LESSON LOG	School	Sauyo High School	Grade Level	Grade 10
	Teacher	Mr. Jonathan R. Bacolod, LPT	Learning Area	Mathematics
	Teaching Dates and Time	Week 1, January 3 – 7, 2019	Quarter	1st

I. OBJECTIVES	DAY 1	DAY 2	DAY 3	DAY 4
A. Content Standards:	The learner demonstrates understanding of key concepts of sequences, polynomials and polynomial equations.			
B. Performance Standards:	The learner is able to formulate and solve problems involving sequences, polynomials and polynomial equations in different disciplines through appropriate and accurate representations			
C. Learning Competencies/ Objectives: (Write the LC code for each.)	1. Evaluate the rules of given sequences; 2. Calculate the next terms of a given sequences; and, 3. Exhibit interest and perseverance in solving problems.	1. Execute the steps in finding the rule of a given arithmetic sequence; 2. Find the next terms of a given arithmetic sequence; and, 3. Project interest and enjoyment in solving problems.	1. State the steps in finding the arithmetic mean; 2. Generate the arithmetic mean given two terms of a sequence; and, 3. Display interest and willingness in solving problems.	1. Derive the formula in computing arithmetic series; 2. Compute the number of terms of a given arithmetic series; and, 3. Display enjoyment and independence in solving problems.
II. CONTENT	PATTERNS AND ALGEBRA			
	Sequences	Arithmetic Sequences	Arithmetic Means	Arithmetic Series
III. LEARNING RESOURCES				
A. References				
1. Teacher's Guide Pages	pp. 1–10	pp. 11–21	pp. 22–30	pp. 31–41
2. Learner's Materials Pages	pp. 1–6	pp. 7–13	pp. 14–18	pp. 19–25
3. Textbook Pages	pp. 1–8	pp. 9–18	pp. 19–25	pp. 26–35
4. Additional Materials from Learning Resources Portal				
B. Other Learning Resources	Flashcards	Flashcards	Flashcards	Flashcards
IV. PROCEDURES				

A. Reviewing Previous Lesson or Presenting New Lesson	**Sequences**
	
	Sequence: a function whose domain is the finite set {1, 2, 3, …, n} or the infinite set {1, 2, 3, …}
	Finite Sequence: a sequence of numbers that is a fixed length long
	Infinite Sequence: an endless progression of numbers
	
	Rules for Sequences
	
	Linear Sequence: a sequence with constant first differences (d_1)
	• $a_n = an + b$
	• $a + b = a_1$
	• $a = d_1$
	
	Quadratic Sequence: a sequence with constant second differences (d_2)
	• $a_n = an^2 + bn + c$
	• $a + b + c = a_1$
	• $3a + b = d_1$
	• $2a = d_2$
		Arithmetic Sequences
		
		Arithmetic Sequence: a sequence where every term after the first is obtained by adding a constant called the common difference
		
		Common difference: the constant difference d between any two consecutive terms
		
		To find any term in an arithmetic sequence, use
		
		$a_n = a_1 + (n-1)d$
			Arithmetic Means
			
			Arithmetic Extremes: the first and last terms of a finite arithmetic sequence
			
			Arithmetic Means: the terms between the arithmetic extremes
			
			Average: the arithmetic mean between two numbers
			
			To insert more than one arithmetic mean, use the difference formula d.
			
			$d = \frac{a_n - a_k}{n-k}$
				Arithmetic Series
				
				Arithmetic Series: the indicated sum of the terms of an arithmetic sequence
				
				If the first term and the n^{th} term are given, then
				
				$S_n = \frac{n}{2}(a_1 + a_n)$
				
				If the n^{th} term is not given, then
				
				$S_n = \frac{n}{2}[2a_1 + (n-1)d]$

B. Establishing a Purpose for the Lesson	The purpose of this lesson is to enable the students to solve real life problems involving sequences.	The purpose of this lesson is to enable the students to solve real life problems involving arithmetic sequences.	The purpose of this lesson is to enable the students to solve real life problems involving arithmetic means.	The purpose of this lesson is to enable the students to solve real life problems involving arithmetic series.

C. Presenting Examples/ Instances of the Lesson	Some examples of sequences are the following: 1. -2, 4, -8, 16,... 2. 4, 1, -2, -5,... 3. 1, 8, 27, 64,...	Some examples of arithmetic sequences are the following: 1. $14, 6, -2, \ldots a_{28}$ 2. $3, 5, 7, \ldots a_{21}$ 3. $1.4, 4.5, 7.6, \ldots a_{51}$	Some examples of arithmetic means are the following: 1. The arithmetic mean of 7 and 11 is 9. 2. The arithmetic mean of 21 and 35 is 28. 3. The two arithmetic means between 7 and 13 are 9 and 11.	Some examples of arithmetic series are the following: 1. The sum of even integers from 5 to 11 is 24. 2. $1+3+5+7=16$
D. Discussing New Concepts and Practicing New Skills #1	**Practice Exercises** A. Find the first 5 terms of the sequence given the n_{th} term. 1. $a_n = n+4$ 2. $a_n = 2n-1$ 3. $a_n = 12-3n$ 4. $a_n = 3^n$ 5. $a_n = -2^n$	**Practice Exercises** A. Find the specified term of each arithmetic sequence. 1. $2, 5, 8, \ldots a_8$ 2. $-11, -7, -3, \ldots a_{23}$ 3. $10, -2, -14, \ldots a_{17}$ 4. $y, x, 2x-y, \ldots a_{10}$ 5. $3, 3.25, 3.5, \ldots a_{16}$	**Practice Exercises** Insert the indicated number of arithmetic means between the given arithmetic extremes. 1. 2 and 32 [1] 2. -12 and 6 [3] 3. 68 and 3 [4] 4. 15x and 23x [1] 5. $9\sqrt{3}$ and $11\sqrt{3}$ [1] 6. $2\sqrt{5}$ and $14\sqrt{5}$ [2] 7. $\frac{3}{7}$ and $\frac{11}{7}$ [1]	**Practice Exercises** A. Find the sum of each arithmetic sequence. 1. 2, 5, 8,... to 8 terms 2. -11, -7, -3,... to 23 terms 3. Sum of odd integers from 1 to 100 4. Sum of the integers between 50 and 200 which are divisible by 5

E. Discussing New Concepts and Practicing New Skills #2	B. Determine the rule that governs each sequence. 1. 5, 9, 13, 17,... 2. 2, 5, 8, 11,... 3. -11, -7, -1, 7,... 4. 1, 4, 10, 19,... 5. 1, -3, 9, -27,... 6. 1, 8, 27, 64,... 7. $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \ldots$	B. Find the specified term. 1. 18^{th} term of the arithmetic sequence if $a_1 = 25$ and $d = -2$. 2. 11^{th} term of the arithmetic sequence if $a_1 = -15$ and $d = 6$. 3. In the sequence 2, 6, 10,..., what term has a value of 106? 4. In the sequence 7, 4, 1,..., what term has a value of -296?		B. In each arithmetic series, find the specified unknown. 1. $S_n = 90$, a_1=10, a_n=26, n=? 2. $S_n = 1{,}800$, a_n=185, n=18, a_1=? 3. $S_n = 119$, a_1=5, d=4, n=? 4. $a_{10} = 27.5$, d=3, a_1=?, S_n=? 5. Sum of odd integers from 1 to 100

F. Developing Mastery	**Problem Set** Find the first 5 terms of the sequence given the n_{th} term. 1. $a_n = n+3$ 2. $a_n = 3n-1$ 3. $a_n = 10-3n$ 4. $a_n = 2^n$ 5. $a_n = -3^n$ Determine the rule that governs each sequence. 1. 5, 10, 15, 20,... 2. -1, -7, -11, -13,... 3. -2, 4, -8, 16,... 4. 4, 1, -2, -5,... 5. 1, 8, 27, 64,... 6. $\frac{1}{3}, \frac{1}{7}, \frac{1}{11}, \frac{1}{15}, ...$	**Problem Set** A. Find the specified term of each arithmetic sequence. 1. $3, 5, 7, ...a_{21}$ 2. $1.4, 4.5, 7.6, ...a_{51}$ 3. $x-2, 4x, 7x+2, ...a_{12}$ 4. $14, 6, -2, ...a_{28}$ 5. $5, -1, -7, ...a_{18}$ B. Find the specified term. 1. 17^{th} term of the sequence if a_8 = 5 and a_{21} = -60. 2. 5^{th} term of the sequence if a_{15} = 29 and a_{27} = 47. 3. If a_{24} = 85 and a_{28} = 100, a_1=? 4. If a_1 = -4 and a_{25} = -100, a_{101}=?	**Problem Set** Insert the indicated number of arithmetic means between the given arithmetic extremes. 1. -5 and 1 [2] 2. 24 and -12 [4] 3. 8 and 23 [4] 4. 4x and -16x [5] 5. $6\sqrt{5}$ and $12\sqrt{5}$ [1] 6. $-3\sqrt{3}$ and $15\sqrt{3}$ [5] 7. $\frac{1}{2}$ and 2 [2]	**Problem Set** A. Find the sum of each arithmetic sequence. 1. 3, 5, 7,... to 31 terms 2. 10, -2, -14,... to 17 terms 3. Sum of even integers from 10 to 90 4. Sum of the integers between 2 and 100 which are divisible by 3 B. In each arithmetic series, find the specified unknown. 1. S_n = 50, a_1=4, a_n=16, n=? 2. S_n = 195, a_n=33, d=3, a_1=? 3. S_n = -15, a_1=12, d=-3, n=? 4. Sum of odd integers from 1 to 100
G. Finding Practical Application of Concepts and Skills in Daily Living	Let the students answer the following questions: 1. In what real life situations or problems can we observe some examples of sequences? 2. How can you apply your knowledge of sequences in solving these real life problems?	Let the students answer the following questions: 1. In what real life situations or problems can we observe some examples of arithmetic sequences? 2. How can you apply your knowledge of arithmetic sequences in solving these real life problems?	Let the students answer the following questions: 1. In what real life situations or problems can we observe some examples of arithmetic means? 2. How can you apply your knowledge of arithmetic means in solving these real life problems?	Let the students answer the following questions: 1. In what real life situations or problems can we observe some examples of arithmetic series? 2. How can you apply your knowledge of arithmetic series in solving these real life problems?

H. Making Generalization and Abstractions about the Lesson	Let the students answer the following questions: 1. In your own words, what are sequences? 2. How do we solve problems involving sequences?	Let the students answer the following questions: 1. In your own words, what are arithmetic sequences? 2. How do we solve problems involving arithmetic sequences?	Let the students answer the following questions: 1. In your own words, what are arithmetic means? 2. How do we solve problems involving arithmetic means?	Let the students answer the following questions: 1. In your own words, what are arithmetic series? 2. How do we solve problems involving arithmetic series?
I. Evaluating Learning		**Quiz #1** Find the specified term. 1. The 101^{th} term of the arithmetic sequence if a_1=-5 and d=-4. 2. The 39^{th} term of the arithmetic sequence if $a_1 = 40$ and $d = \frac{1}{2}$. 3. In the sequence 6, 10, 14,..., what term has a value of 286? 4. In the sequence 3, $\frac{7}{3}$, $\frac{5}{3}$,..., what term has a value of -27? 5. The 1^{st} term of the sequence if $a_5 = 26$ and $a_{12} = 47$. 6. The 61^{th} term of the sequence if $a_4 = 8$ and $a_{21} = 26$. 7. If a_3=8 and a_{16}=47, a_{71}=? 8. If a_{21}=64 and a_{100}=301, a_{11}=?		
J. Additional Activities for Application or Remediation				

VI. REMARKS	Objectives have been attained: _____ Objectives were not attained due to: _____	Objectives have been attained: _____ Objectives were not attained due to: _____	Objectives have been attained: _____ Objectives were not attained due to: _____	Objectives have been attained: _____ Objectives were not attained due to: _____
VII. REFLECTION				
A. No. of learners who earned 80% in the evaluation	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____
B. No. of learners who require additional activities for remediation who scored below 80%	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____	10–Bohr: _____out of _____ 10–Avogadro: _____out of _____
C. Did the remedial lessons work? No. of learners who have caught up with the lesson	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____
D. No. of learners who continue to require remediation	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____	10–Bohr: _____ 10–Avogadro: _____
E. Which of my teaching strategies worked well? Why did these work?				
F. What difficulties did I encounter which my principal or supervisor can help me solve?				
G. What innovation or localized materials did I use/discover which I wish to share with other teachers?				

Checked by:

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