



SAUYO HIGH SCHOOL
MATHEMATICS DEPARTMENT
S.Y. 2019 – 2020
Lesson Plan for Mathematics 10



Module title: Polynomial Equations
Date: August 7, 2019

Grade Level: Grade 10
Designed by: Mr. Jonathan R. Bacolod, LPT

I. Learning Competencies/Objectives

- A. Content Standard: The learner demonstrates understanding of key concepts of sequences, polynomials and polynomial equations.
- B. Performance Standard: 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 Competency: The learner proves the Remainder Theorem and the Factor Theorem. (M10AL-Ig-2)

At the end of a 50-minute period, 80% of the Grade 10 students should be able to do the following with at least 75% accuracy:

- a. Describe the factor theorem;
- b. Determine whether a binomial is a factor of a polynomial using the factor theorem; and,
- c. Show interest and perseverance in solving problems.

II. Subject Matter

- A. Topic: Factor Theorem
- B. Reference: Mathematics 10 Learner's Module pp. 93-94
- C. Materials: Tarpapel showing the steps and the formula for Factor Theorem

III. Procedure

A. Daily routine

- 1. Cleaning and arranging of chairs
- 2. Greeting
- 3. Checking of assignment
- 4. Drill: Flashcards showing the operations on signed numbers
- 5. Review: Remainder Theorem
Use the remainder theorem to find the remainder of the polynomial function:
 $f(x) = 4x^3 + 2x + 10$ at $x = -3$
- 6. Motivation: A basket contains 5 apples. How do you distribute the 5 apples to 5 children while leaving 1 apple in the basket?

B. Lesson Proper

- 1. Direct instruction: The teacher describes the main concepts of the lesson.

Factor Theorem

Factor Theorem: If $P(x)$ is a polynomial and $P(c) = 0$, then $x - c$ is a factor of $P(x)$. Conversely, if $x - c$ is a factor of $P(x)$, then $P(c) = 0$.

- 2. Demonstration: The teacher shows how to solve the first item in the Practice Exercises.
- 3. Practice Exercises and Boardwork: (See at the end.)
- 4. Generalization: Let the students answer the following questions.
 - a. In your own words, what is the factor theorem?
 - b. How do we solve problems involving factor theorem?

C. Application: Problem Set (See at the end.)

Practice Exercises

Use the factor theorem to determine whether the binomial is a factor of the given polynomial.

1. $(x + 3); P(x) = 2x^3 + 11x^2 + 16x + 6$
2. $(x + 1); P(x) = 2x^3 + 5x^2 + 4x + 1$
3. $(x - 2); P(x) = 4x^3 - 11x^2 + 8x - 4$
4. $(x + 3); P(x) = x^4 + 3x^3 - 2x^2 - 5x + 3$
5. $(2x - 1); P(x) = 2x^3 - 7x^2 + x + 1$

Problem Set

Use the factor theorem to determine whether the binomial is a factor of the given polynomial.

1. $(x - 2); P(x) = x^{20} - 4x^{18} + 3x - 6$
2. $(x - 4); P(x) = 3x^3 - 15x^2 + 10x + 8$
3. $(x + 2); P(x) = x^4 - 3x^3 + 5x - 2$
4. $(x - 2); P(x) = 3x^4 - 6x^3 + 5x + 10$
5. $(x + 5); P(x) = x^3 + x^2 - 25x + 25$

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