

 GRADES 1 to 12 DAILY LESSON LOG	School	Sauyo High School	Grade Level	Grade 8
	Teacher	Mr. Jonathan R. Bacolod, LPT	Learning Area	Mathematics
	Teaching Dates and Time	Week 9, July 29 – August 2, 2019	Quarter	1st

I. OBJECTIVES	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Learning Competencies/ Objectives:	1. Execute the steps in dividing rational algebraic expressions; 2. Find the product of rational algebraic expressions; and, 3. Show perseverance and interest in solving problems.	1. Describe the steps in adding and subtracting similar rational algebraic expressions; 2. Perform the steps in adding and subtracting similar rational algebraic expressions; and, 3. Project independence and willingness in solving problems.	1. Discuss the steps in adding and subtracting dissimilar rational algebraic expressions; 2. Perform the steps in adding and subtracting dissimilar rational algebraic expressions; and, 3. Exhibit willingness and interest in solving problems.	1. Reiterate the steps in simplifying complex rational expressions; 2. Simplify complex rational expressions; and, 3. Project willingness and self-reliance in solving problems.	1. Describe rational equations; 2. Generate solutions to rational equations; and, 3. Exhibit willingness and interest in solving problems.
II. CONTENT	RATIONAL ALGEBRAIC EXPRESSIONS AND ALGEBRAIC EXPRESSIONS WITH INTEGRAL EXPONENTS				
	Dividing Rational Algebraic Expressions	Adding and Subtracting Similar Rational Algebraic Expressions	Adding and Subtracting Dissimilar Rational Algebraic Expressions	Complex Rational Expressions	Solution of Rational Equation
III. LEARNING RESOURCES					
A. References					
1. Teacher's Guide Pages	pp. 189–201	pp. 100–105	pp. 64–71	pp. 211–223	pp. 211–223
2. Learner's Materials Pages	pp. 206–218	pp. 86–90	pp. 55–61	pp. 228–242	pp. 228–242
3. Textbook Pages	pp. 224–237	pp. 115–121	pp. 74–82	pp. 250–265	pp. 250–265
4. Additional Materials from Learning Resources Portal					
B. Other Learning Resources	Flashcards	Flashcards	Flashcards	Flashcards	Flashcards

IV. PROCEDURES	
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<p>A. Reviewing Previous Lesson or Presenting New Lesson</p>	<p>Dividing Rational Algebraic Expressions</p> <p>How to Divide Rational Algebraic Expressions:</p> <ol style="list-style-type: none"> 1. Copy the dividend. 2. Change the operation to multiplication. 3. Find the reciprocal of the divisor. 4. Proceed to multiplication. <p>In symbols,</p> $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}, \quad b, c, d \neq 0$	<p>Adding and Subtracting Similar Rational Algebraic Expressions</p> <p>How to Add or Subtract Similar Rational Algebraic Expressions:</p> <ol style="list-style-type: none"> 1. Add or subtract the numerators. 2. Simplify the result. <p>In symbols,</p> $\frac{a}{b} + \frac{c}{b} = \frac{a+c}{b}$	<p>Adding and Subtracting Dissimilar Rational Algebraic Expressions</p> <p>How to Add or Subtract Dissimilar Rational Algebraic Expressions:</p> <ol style="list-style-type: none"> 1. Change the expressions into similar rational algebraic expressions using the least common denominator or LCD. 2. Proceed as in adding or subtracting similar fractions. 	<p>Complex Rational Expressions</p> <p>Complex Rational Expression: if the numerator or denominator, or both numerator and denominator of a rational algebraic expression is also a rational algebraic expression</p> <p>A rational algebraic expression is said to be in its simplest form when the numerator and denominator are polynomials with no common factors other than 1.</p> <p>How to Simplify Complex Rational Expressions:</p> <ol style="list-style-type: none"> 1. Find the LCD of all the denominators. 2. Multiply all the terms of the complex rational expression by the LCD. 3. Simplify the expression. 	<p>Solution of Rational Equation</p> <p>Rational Equation: an equation that contains one or more rational expressions. It is an equality of two ratios.</p> <p>Rational equations are easier to solve if you first clear all denominators other than 1.</p> <p>In solving rational equations:</p> <ol style="list-style-type: none"> 1. Determine which values of the variable are not permissible in the expression. 2. Determine the LCD of all rational expressions. 3. Multiply both sides of the equation by the LCD. 4. Simplify the equation by removing the parenthesis and combining similar terms. 5. Solve the equation resulting from step 4. 6. Check for extraneous solution. <p>Extraneous solution: the value obtained in solving an equation which does not satisfy the equation</p>
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B. Establishing a Purpose for the Lesson	The purpose of this lesson is to enable the students to solve real life problems by dividing rational algebraic expressions.	The purpose of this lesson is to enable the students to solve real life problems by adding and subtracting similar rational algebraic expressions.	The purpose of this lesson is to enable the students to solve real life problems by adding and subtracting dissimilar rational algebraic expressions.	The purpose of this lesson is to enable the students to solve real life problems involving complex rational expressions.	The purpose of this lesson is to enable the students to solve real life problems involving rational equations.
C. Discussing New Concepts and Practicing New Skills #1	<p>Practice Exercises</p> <p>Find the quotient of the following rational algebraic expressions.</p> <ol style="list-style-type: none"> $\frac{81xz^3}{36y} \div \frac{27x^2z^2}{12xy}$ $\frac{2a+2b}{a^2+ab} \div \frac{4}{a}$ $\frac{16x^2-9}{6-5x-4x^2} \div \frac{16x^2+24x+9}{4x^2+11x+6}$ $\frac{x^2+2x+1}{x^2+4x+3} \div \frac{x^2-1}{x^2+2x+1}$ $\frac{x-1}{x+1} \div \frac{1-x}{x^2+2x+1}$ 	<p>Practice Exercises</p> <p>Perform the indicated operation.</p> <ol style="list-style-type: none"> $\frac{6}{2a-6} + \frac{4}{2a-6}$ $\frac{x^2+3x-2}{x^2-4} + \frac{x^2+2x+4}{x^2-4}$ $\frac{7}{4x-2} - \frac{5}{4x-2}$ $\frac{x^2+3x+2}{x^2-2x+1} - \frac{3x+3}{x^2-2x+1}$ $\frac{x-2}{x-1} + \frac{1}{x-1}$ 	<p>Practice Exercises</p> <p>Perform the indicated operation.</p> <ol style="list-style-type: none"> $\frac{3}{x+1} + \frac{4}{x}$ $\frac{x+8}{x^2-4x+4} + \frac{3x-2}{x^2-4}$ $\frac{2x}{x^2-9} - \frac{3}{x-3}$ $\frac{3}{x^2-x-2} - \frac{2}{x^2-5x+6}$ $\frac{x+2}{x} - \frac{x+2}{2}$ 	<p>Practice Exercises</p> <p>Simplify the following complex rational expressions.</p> <ol style="list-style-type: none"> $\frac{\frac{1}{x} - \frac{1}{y}}{\frac{1}{x^2} + \frac{1}{y^2}}$ $\frac{\frac{x-y}{x+y} - \frac{y}{x}}{\frac{x}{y} + \frac{x-y}{x+y}}$ $\frac{1 + \frac{x}{2}}{1 + \frac{2}{x^2}}$ $\frac{\frac{a}{a-b} + \frac{a}{a+b}}{\frac{b}{a-b} + \frac{a}{a+b}}$ $\frac{4 - \frac{4}{y^2}}{2 + \frac{2}{y}}$ 	<p>Practice Exercises</p> <p>A. Determine whether the given value on the left is a solution to the rational equation or not. Write <i>Yes</i> or <i>No</i>.</p> <ol style="list-style-type: none"> 4; $\frac{2}{x} = \frac{6}{12}$ -1; $\frac{-3}{2x} = \frac{9}{6}$ $\frac{1}{9}$; $3x^2 = \frac{1}{27}$ -1; $\frac{2}{x} - \frac{x}{3} = 5$ 6; $\frac{1}{2} + \frac{1}{3} = \frac{1}{x}$

D. Discussing New Concepts and Practicing New Skills #2					<p>B. Solve each rational equation. If it has no solution, write “<i>No Solution</i>”.</p> <p>1. $\frac{a}{3} = \frac{5}{12}$</p> <p>2. $\frac{6y}{7} - \frac{y}{2} = 5$</p> <p>3. $\frac{1}{x} - \frac{1}{x^2} = \frac{1}{4}$</p> <p>4. $\frac{x}{10} + \frac{x}{6} - \frac{x}{15} = 1$</p> <p>5. $\frac{2}{5} + \frac{2}{y} = 1$</p>
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<p>E. Developing Mastery</p>	<p>Problem Set</p> <p>Find the quotient of the following rational algebraic expressions.</p> <ol style="list-style-type: none"> $\frac{14x^2}{20y^2} \div \frac{56x^2}{y}$ $\frac{4a-4b}{30a^2} \div \frac{a-b}{9a}$ $\frac{\frac{x^2-4}{x^2+4x+4}}{\frac{x^2-x-2}{x^2+3x+2}} \div$ $\frac{x^2-2x-3}{x^2-3x} \div \frac{x^2-4}{x^2+2x}$ $\frac{x^2-4}{x^2+2x} \div \frac{x^2+x-6}{2x+4}$ 	<p>Problem Set</p> <p>Perform the indicated operation.</p> <ol style="list-style-type: none"> $\frac{6}{3a-9} - \frac{3}{3a-9}$ $\frac{x^2-3x-7}{x^2-9} + \frac{x^2-9}{x^2-2x+4}$ $\frac{7}{3x-6} - \frac{4}{3x-6}$ $\frac{\frac{x^2+2x+2}{x^2-4x+4}}{\frac{x^2-4x+4}{2x+6}} -$ $\frac{x-2}{x-4} - \frac{2}{x-4}$ 	<p>Problem Set</p> <p>Perform the indicated operation.</p> <ol style="list-style-type: none"> $\frac{a}{a-b} - \frac{b}{a+b}$ $\frac{3}{2x+1} + \frac{5}{3x-2}$ $\frac{3a+12}{2a-8} + \frac{a+4}{a-4}$ $\frac{y+1}{y} + \frac{y-1}{y+1}$ $\frac{2x}{x^2-4x+4} - \frac{1}{x-2}$ 	<p>Problem Set</p> <p>Simplify the following complex rational expressions.</p> <ol style="list-style-type: none"> $\frac{x + \frac{x}{y}}{1 + \frac{1}{y}}$ $\frac{1 + \frac{3x}{x+3}}{x + \frac{3x}{x-3}}$ $\frac{x + \frac{y}{x}}{y - \frac{y}{x}}$ $\frac{\frac{1}{a-2} - \frac{3}{a-1}}{\frac{a-2}{5} + \frac{a-1}{a-1}}$ $\frac{\frac{y+1}{y}}{\frac{y-1}{2y}}$ 	<p>Problem Set</p> <p>A. Determine whether the given value on the left is a solution to the rational equation or not. Write <i>Yes</i> or <i>No</i>.</p> <ol style="list-style-type: none"> 1; $\frac{3x}{5} = \frac{15}{25}$ -7; $\frac{1}{x^2} = \frac{1}{49}$ $\frac{-6}{7}$; $\frac{2}{3} + \frac{1}{2} = \frac{1}{x}$ $\frac{-1}{2}$; $\frac{1}{y} + \frac{1}{y^2} = 2$ -2; $\frac{2}{x} + \frac{x}{4} = \frac{-3}{2}$ <p>B. Solve each rational equation. If it has no solution, write <i>"No Solution"</i>.</p> <ol style="list-style-type: none"> $\frac{n}{6} - \frac{n}{4} = 9$ $\frac{5}{4} - \frac{3}{x} = \frac{1}{2}$ $\frac{a+1}{3} = \frac{4}{a}$ $\frac{6}{x} + \frac{9}{2x} = 3$ $3b - \frac{3}{4} = \frac{2b}{3}$
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F. Finding Practical Application of Concepts and Skills in Daily Living	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In what real life situations or problems can we observe some examples of dividing rational algebraic expressions?2. How can you apply your knowledge of dividing rational algebraic expressions in solving these real life problems?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In what real life situations or problems can we observe some examples of adding and subtracting similar rational algebraic expressions?2. How can you apply your knowledge of adding and subtracting similar rational algebraic expressions in solving these real life problems?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In what real life situations or problems can we observe some examples of adding and subtracting dissimilar rational algebraic expressions?2. How can you apply your knowledge of adding and subtracting dissimilar rational algebraic expressions in solving these real life problems?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In what real life situations or problems can we observe some examples of complex rational expressions?2. How can you apply your knowledge of complex rational expressions in solving these real life problems?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In what real life situations or problems can we observe some examples of rational equations?2. How can you apply your knowledge of rational equations in solving these real life problems?
G. Making Generalization and Abstractions about the Lesson	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In your own words, how do we multiply rational algebraic expressions?2. How do we solve problems involving algebraic expressions that require dividing rational algebraic expressions?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In your own words, how do we add or subtract similar rational algebraic expressions?2. How do we solve problems involving algebraic expressions that require adding and subtracting similar rational algebraic expressions?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In your own words, how do we add or subtract dissimilar rational algebraic expressions?2. How do we solve problems involving algebraic expressions that require adding and subtracting dissimilar rational algebraic expressions?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In your own words, what are complex rational expressions?2. How do we solve problems involving algebraic expressions that require complex rational expressions?	<p>Let the students answer the following questions:</p> <ol style="list-style-type: none">1. In your own words, what are rational equations?2. How do we solve rational equations?
H. Evaluating Learning					
I. 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: _____	Objectives have been attained: _____ Objectives were not attained due to: _____
VII. REFLECTION					
A. No. of learners who earned 80% in the evaluation	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____
B. No. of learners who require additional activities for remediation who scored below 80%	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____	8-Bohr: _____ out of _____ 8-Copernicus: _____ out of _____ 8-Fleming: _____ out of _____
C. Did the remedial lessons work? No. of learners who have caught up with the lesson	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____
D. No. of learners who continue to require remediation	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____	8-Bohr: _____ 8-Copernicus: _____ 8-Fleming: _____
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:

DR. LORETO R. DOMINGO
Head, Mathematics Department