MATH 6: HANDOUT 15

1. Algebra: Addition and Subtraction of Algebraic Fractions

When adding or subtracting fractions with variables or expressions in the denominator, determine what the LCM is, which is similar to adding or subtracting fractions in arithmetics. Let's look at an example: $\frac{3}{a} + \frac{2}{b}$. The LCM of a and b is ab.

$$\frac{3}{a} + \frac{2}{b} = \frac{3b}{ab} + \frac{2a}{ab} = \frac{3b + 2a}{ab}$$

2. Algebra: Multiplication and Division of Algebraic Fractions

When multiplying or dividing algebraic fractions, use exponent laws to add or subtract the exponents with the same base. For example: $\frac{a^2b^3}{b^4a^2} \times \frac{a^4b^4}{a^2b^3} = a^2$

3. Homework

Simplify the following expressions:

1. $\frac{1}{a} + \frac{2}{b} =$

2. $\frac{1}{x-1} + \frac{2}{x-2} =$

3. $b - \frac{ab}{a-b} =$

4. $\frac{b-a}{b+a} - \frac{b+a}{b-a} =$

5. $\frac{4}{x} + \frac{3}{xy} - \frac{3}{2x} =$

6. $\frac{\frac{2a}{4a}}{9} =$

7. $\frac{\frac{2a}{9}}{4a} =$

8. $\frac{\frac{x}{2}}{\frac{3x}{4}} =$

9. $\frac{9x^3}{xy} \div \frac{6xy}{9yz} \div \frac{3z^2}{2x^2z} =$

10. $\frac{2ab}{a^2 - b^2} \times \frac{a+b}{6b^2c} =$

11. Take the Math Kangaroo test.