Multiplying Dividing Fractions Worksheet

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Part 1: Building a Foundation

What is the first step in multiplying two fractions?

Hint: Think about the operations involved in multiplication.

- ◯ Add the numerators
- ◯ Multiply the numerators
- ◯ Subtract the denominators
- ◯ Divide the numerators

Which of the following are steps in dividing fractions? (Select all that apply)

Hint: Consider the process of division and the role of the reciprocal.

- ☐ Find the reciprocal of the divisor
- ☐ Multiply the numerators
- ☐ Subtract the numerators
- ☐ Multiply by the reciprocal

Explain what it means to simplify a fraction and why it is important.

Hint: Think about the process of reducing fractions to their simplest form.

List the steps to convert a mixed number into an improper fraction.

Hint: Consider how to express the whole number and the fraction together.

1. Step 1: Multiply the whole number by the denominator.

2. Step 2: Add the numerator to the result.

3. Step 3: Place the result over the original denominator.

Part 2: comprehension and Application

When simplifying the fraction 18/24, what is the greatest common divisor (GCD) used?

Hint: Think about the factors of both numbers.

- ◯ 2
- ◯ 3
- ◯ 6
- ◯ 9

Which of the following fractions are equivalent to 3/4? (Select all that apply)

Hint: Consider multiplying the numerator and denominator by the same number.

- ☐ 6/8
- ☐ 9/12
- ☐ 12/16
- ☐ 15/20

Describe the process of cross-cancellation and how it can simplify the multiplication of fractions.

Hint: Think about how you can reduce fractions before multiplying.

What is the product of (3/5) * (10/12) after simplification?

Hint: Calculate the product and then simplify the result.

- ◯ 1/2
- ◯ 5/8
- ◯ 1/4
- ◯ 1/3

A recipe requires 2/3 cup of sugar. If you want to make half of the recipe, how much sugar will you need? Show your calculations.

Hint: Think about how to multiply fractions to find half.

Part 3: Analysis, Evaluation, and Creation

Which of the following statements correctly describes the relationship between a fraction and its reciprocal?

Hint: Consider what happens when you multiply a fraction by its reciprocal.

- ◯ A fraction and its reciprocal have the same value.
- ◯ A fraction and its reciprocal multiply to 1.
- ◯ A fraction and its reciprocal add to 1.
- ◯ A fraction and its reciprocal are always improper fractions.

Analyze the fractions 5/6 and 10/12. Which statements are true? (Select all that apply)

Hint: Consider the properties of equivalent fractions.

- [ ] They are equivalent fractions.
- [ ] 5/6 is in simplest form.
- [ ] 10/12 can be simplified to 5/6.
- [ ] Both fractions have the same denominator.

Given the fractions 3/4 and 9/12, analyze their relationship and explain whether they are equivalent or not. Provide your reasoning.

Hint: Think about simplifying both fractions to compare them.

If you multiply a fraction by its reciprocal, what is the result?

Hint: Consider the definition of a reciprocal.

- ◯ 0
- ◯ 1
- ◯ The original fraction
- ◯ The reciprocal

Evaluate the following statements about multiplying fractions. Which are true? (Select all that apply)

Hint: Think about the effects of multiplication on fractions.

- [ ] The product of two fractions is always less than either fraction.
- [ ] The product of two fractions can be greater than one of the fractions.
- [ ] Multiplying by a fraction less than 1 reduces the value.
- [ ] Multiplying by a fraction greater than 1 increases the value.

Create a real-world problem involving the division of fractions and provide a step-by-step solution to your problem.

Hint: Think about a scenario where you need to divide a quantity into parts.