

# Multiplying Dividing Fractions Worksheet Questions and Answers PDF

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## Part 1: Building a Foundation

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**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

■ The first step in multiplying two fractions is to multiply 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 ✓**

■ The steps in dividing fractions include finding the reciprocal of the divisor and multiplying 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.*

**Simplifying a fraction means reducing it to its lowest terms, which makes it easier to understand and work with.**

**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.

**Multiply.**

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

**Add.**

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

**Divide.**

To convert a mixed number to an improper fraction, multiply the whole number by the denominator, add the numerator, and place the result over the original denominator.

## Part 2: comprehension and Application

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**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

■ The greatest common divisor of 18 and 24 is 6.

**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.*

- $6/8$  ✓  
  $9/12$  ✓  
  $12/16$  ✓  
  $15/20$

■ The fractions equivalent to  $3/4$  are  $6/8$ ,  $9/12$ , and  $12/16$ .

**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.*

■ **Cross-cancellation involves reducing fractions before multiplying, which can simplify calculations and lead to smaller numbers.**

**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

■ The product of  $(3/5) * (10/12)$  after simplification is  $1/2$ .

**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.*

■ To find half of  $2/3$  cup of sugar, multiply  $2/3$  by  $1/2$ , which equals  $1/3$  cup.

### Part 3: Analysis, Evaluation, and Creation

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**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.

■ A fraction and its reciprocal multiply to 1.

**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.

The statements that are true include that they are equivalent fractions,  $5/6$  is in simplest form, and  $10/12$  can be simplified to  $5/6$ .

**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.*

**The fractions  $3/4$  and  $9/12$  are equivalent because when you simplify  $9/12$ , you get  $3/4$ .**

**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

**The result of multiplying a fraction by its reciprocal is 1.**

**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. ✓**

The true statements include that the product of two fractions can be greater than one of the fractions and that multiplying by a fraction less than 1 reduces 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.*

**An example could be dividing a recipe or a quantity of material into smaller portions, showing the calculations involved.**