

Plz Helppp1 7/9 Divided By 4/5* In The Lowest Terms*(NO DECIMAL ANSWERS)

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Understanding the Problem

When faced with the expression "7/9 divided by 4/5," the goal is to simplify the division of these two fractions into its lowest terms, without converting it into a decimal. This involves understanding how to divide fractions, simplifying the resulting fraction, and ensuring the final answer is in its simplest form.

Division of fractions may seem complicated at first, but it follows a straightforward process known as "multiplying by the reciprocal." This process makes the calculation more manageable and helps ensure the answer remains in fractional form without decimals.

Step-by-Step Approach to Dividing Fractions

Step 1: Write Down the Original Expression

The original problem is:

$\left[\frac{7}{9} \div \frac{4}{5} \right]$

This means dividing the fraction 7/9 by 4/5.

Step 2: Recall the Rule for Dividing Fractions

To divide fractions, multiply by the reciprocal of the divisor. The reciprocal of a fraction is obtained by swapping its numerator and denominator.

For example:

- Reciprocal of $\frac{4}{5}$ is $\frac{5}{4}$.

Applying this rule:

$$\frac{7}{9} \div \frac{4}{5} = \frac{7}{9} \times \frac{5}{4}$$

Step 3: Multiply the Fractions

Multiply the numerators and denominators separately:

$$\frac{7 \times 5}{9 \times 4} = \frac{35}{36}$$

This gives the product of the two fractions.

Step 4: Simplify the Result to Lowest Terms

The resulting fraction is $\frac{35}{36}$. Now, check if this fraction can be simplified further.

- Find the greatest common divisor (GCD) of 35 and 36.

Since 35 factors into 5 and 7, and 36 factors into 2, 3, and 6, their GCD is 1.

Therefore, $\frac{35}{36}$ is already in its lowest terms.

Understanding Lowest Terms

What Are Lowest Terms?

A fraction is in lowest terms (or simplest form) when the numerator and denominator share no common factors other than 1. Simplifying fractions ensures they are expressed in their most reduced form, which makes comparisons easier and calculations more straightforward.

How to Simplify Fractions

To simplify a fraction:

1. Find the GCD of the numerator and denominator.
2. Divide both numerator and denominator by the GCD.
3. Write the resulting fraction.

Example:

For $\left(\frac{20}{60}\right)$:

- GCD of 20 and 60 is 20.
- Divide numerator and denominator by 20:

$$\left[\frac{20 \div 20}{60 \div 20} = \frac{1}{3} \right]$$

Additional Examples and Practice

Example 1: Dividing $\frac{3}{8}$ by $\frac{2}{5}$

Solution:

- Reciprocal of $\frac{2}{5}$ is $\frac{5}{2}$.
- Multiply:

$$\left[\frac{3}{8} \times \frac{5}{2} = \frac{3 \times 5}{8 \times 2} = \frac{15}{16} \right]$$

- Check for lowest terms:

15 and 16 share no common factors other than 1, so the fraction is already simplified.

Answer: $\left(\frac{15}{16}\right)$

Example 2: Dividing $\frac{9}{12}$ by $\frac{3}{4}$

Solution:

- Reciprocal of $\frac{3}{4}$ is $\frac{4}{3}$.
- Multiply:

$$\left[\frac{9}{12} \times \frac{4}{3} = \frac{9 \times 4}{12 \times 3} = \frac{36}{36} \right]$$

- Simplify:

$$36/36 = 1/1 = 1$$

Answer: 1 (in fractional form, $\frac{1}{1}$)

Important Tips for Dividing Fractions

- Always remember to multiply by the reciprocal of the second fraction when dividing.
- Check if the resulting fraction can be simplified by finding the GCD of numerator and denominator.
- If the numerator and denominator are the same, the fraction simplifies to 1.
- Do not convert fractions to decimals if the problem specifies to keep answers in fractional form.
- Practice with different fractions to become comfortable with the process.

Common Mistakes to Avoid

1. Forgetting to take the reciprocal of the divisor before multiplying.
2. Failing to simplify the final answer to lowest terms.
3. Trying to convert fractions into decimals when not required, which can lead to inaccuracies or loss of precision.
4. Overlooking common factors when simplifying, resulting in fractions that are not fully reduced.

Summary of the Process

To summarize the process of dividing two fractions and simplifying the result:

1. Write the division problem as a multiplication by the reciprocal.
2. Multiply the numerators and denominators.
3. Simplify the resulting fraction to lowest terms by dividing numerator and denominator by their GCD.
4. Ensure the answer is in fractional form, with no common factors other than 1.

In the specific case of $\frac{7}{9}$ divided by $\frac{4}{5}$, the steps led to a straightforward answer:

$$\left[\frac{7}{9} \div \frac{4}{5} = \frac{7}{9} \times \frac{5}{4} = \frac{35}{36} \right]$$

which is already in its lowest terms.

Final Thoughts

Mastering the division of fractions and simplifying to lowest terms is fundamental for many areas of mathematics, including algebra, ratios, and proportions. Practice consistently with different fractions to develop confidence. Remember, the key steps are to reciprocate, multiply, and simplify, all while avoiding the temptation to convert to decimals unless explicitly instructed.

By following these systematic steps, you'll be able to confidently handle fraction division problems and present solutions in their simplest, most understandable form.

Frequently Asked Questions

How do I divide the fraction $\frac{7}{9}$ by $\frac{4}{5}$ and simplify the result to lowest terms?

To divide $\frac{7}{9}$ by $\frac{4}{5}$, multiply $\frac{7}{9}$ by the reciprocal of $\frac{4}{5}$, which is $\frac{5}{4}$. So, $(\frac{7}{9}) \div (\frac{4}{5}) = (\frac{7}{9}) \times (\frac{5}{4}) = \frac{(7 \times 5)}{(9 \times 4)} = \frac{35}{36}$. Since 35 and 36 have no common factors other than 1, the answer in lowest terms is $\frac{35}{36}$.

What is the step-by-step process to simplify the division of $7/9$ by $4/5$?

First, rewrite the division as multiplication by the reciprocal: $7/9 \div 4/5 = 7/9 \times 5/4$. Next, multiply the numerators: $7 \times 5 = 35$, and the denominators: $9 \times 4 = 36$. The resulting fraction is $35/36$. Check for common factors; since 35 and 36 are coprime, the fraction is already in lowest terms.

Is the fraction $35/36$ already in lowest terms after dividing $7/9$ by $4/5$?

Yes, $35/36$ is in lowest terms because the greatest common divisor (GCD) of 35 and 36 is 1, indicating they share no common factors other than 1.

Can the result of dividing $7/9$ by $4/5$ be expressed as a decimal?

No, the problem specifies no decimal answers. The exact simplified fractional form is $35/36$.

Are there any common mistakes to avoid when dividing fractions like $7/9$ by $4/5$?

Yes, common mistakes include flipping the second fraction incorrectly, forgetting to multiply by the reciprocal, or not simplifying the final answer to lowest terms. Always ensure to invert the divisor and multiply, then simplify the resulting fraction.

What is the importance of simplifying fractions to lowest terms in division problems?

Simplifying fractions ensures the answer is in its simplest form, making it easier to interpret, compare, and verify. It also adheres to standard mathematical practices for clarity and accuracy.

Does dividing $7/9$ by $4/5$ change the value of the fraction if not simplified?

Yes, the division changes the value; dividing $7/9$ by $4/5$ results in $35/36$. Simplifying to lowest terms confirms the exact value without any common factors in numerator and denominator.

Additional Resources

Division of Fractions Simplified: A Comprehensive Guide to Plz Helppp1 $7/9$ Divided By $4/5$ in the Lowest Terms (No Decimal Answers)

When it comes to mastering the intricacies of fractions, especially division involving mixed numbers, many students and learners often find themselves overwhelmed. The key to success lies in understanding the fundamental principles of fraction division, simplifying expressions step-by-step, and ensuring the final result is in its lowest terms – all without resorting to decimal conversions. In this detailed article, we will explore the problem `Plz Helppp1 7/9 Divided By 4/5`, unraveling each component with clarity and precision, and providing expert insights on how to approach such problems confidently.

Understanding the Problem: Breaking Down the Components

Before diving into calculations, let's first dissect the problem:

- The expression involves dividing $7/9$ by $4/5$.
- The phrase "Plz Helppp1" appears to be a friendly or informal prompt, perhaps indicating the need for help or assistance.
- The goal is to express the result in the lowest terms, explicitly avoiding decimal answers.

To address this comprehensively, we need to understand the key concepts involved:

1. Fractions and Mixed Numbers
2. Division of Fractions
3. Simplification to Lowest Terms

Fundamental Concepts Explained

Fractions and Mixed Numbers

A fraction expresses a part of a whole or a ratio between two numbers, written as numerator/denominator (e.g., $7/9$). When a fraction combines a whole number and a proper fraction, it's called a mixed number (e.g., $7 \frac{1}{9}$). In this problem, $7/9$ is already a simple proper fraction, so no conversion from a mixed number is necessary unless specified.

Division of Fractions

Dividing fractions involves a "multiply by the reciprocal" approach, which simplifies the process:

$$\left[\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c} \right]$$

This method leverages the fact that dividing by a fraction is equivalent to multiplying by its reciprocal.

Simplification to Lowest Terms

After performing the division, the resulting fraction should be simplified to its lowest terms. This involves:

- Finding the Greatest Common Divisor (GCD) of the numerator and denominator.
- Dividing both numerator and denominator by the GCD to reduce the fraction.

Step-by-Step Solution to the Problem

Let's now work through Plz Helppp1 7/9 Divided By 4/5 systematically:

Step 1: Write the problem in fraction form

$$\left[\frac{7}{9} \div \frac{4}{5} \right]$$

Step 2: Take the reciprocal of the divisor

The divisor is 4/5, so its reciprocal is 5/4.

Step 3: Multiply the dividend by the reciprocal of the divisor

$$\left[\frac{7}{9} \times \frac{5}{4} \right]$$

Step 4: Multiply the numerators and denominators

Numerator:

$$\left[7 \times 5 = 35 \right]$$

\]

Denominator:

$$\begin{aligned} & \backslash[\\ & 9 \times 4 = 36 \\ & \backslash] \end{aligned}$$

Resulting fraction:

$$\begin{aligned} & \backslash[\\ & \frac{35}{36} \\ & \backslash] \end{aligned}$$

Step 5: Simplify the resulting fraction to lowest terms

Check if numerator and denominator have common factors:

- Factors of 35: 1, 5, 7, 35
- Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

Since no common factors other than 1 exist, $\left(\frac{35}{36}\right)$ is already in lowest terms.

Final Answer and Explanation

The division of $\frac{7}{9}$ by $\frac{4}{5}$ results in the fraction $\left(\frac{35}{36}\right)$, which is already in its lowest terms.

This means the problem:

$$\begin{aligned} & \backslash[\\ & \boxed{\frac{7}{9} \div \frac{4}{5} = \frac{35}{36}} \\ & \backslash] \end{aligned}$$

No decimals are involved, aligning with the requirement to avoid decimal answers and maintaining the expression purely in fractional form.

Additional Tips for Fraction Division and Simplification

To become proficient at such calculations, consider the following tips:

- Always convert division of fractions into multiplication by the reciprocal for simplicity.
- Reduce fractions early when possible to ease calculations.
- Find the GCD efficiently using Euclid's Algorithm for larger numbers.
- Always check if the resulting fraction can be simplified further before finalizing your answer.
- Practice with mixed numbers by converting them to improper fractions first:

```
\[
\text{Mixed Number to Improper Fraction:} \quad a\frac{b}{c} = \frac{a \times c + b}{c}
\]
```

For example, if you encounter $7\frac{2}{3}$, convert to:

```
\[
\frac{7 \times 3 + 2}{3} = \frac{21 + 2}{3} = \frac{23}{3}
\]
```

- Avoid decimals unless explicitly asked, to stay in the realm of exact fractional answers.

Conclusion: Mastering Fraction Division in the Lowest Terms

Dividing fractions, especially in the context of mixed numbers or complex expressions, can seem daunting at first glance. However, by understanding the core principles—reciprocals, multiplication, and simplification—you can confidently solve such problems while ensuring your answers are in the lowest terms.

In the specific case of $\frac{7}{9}$ divided by $\frac{4}{5}$, the straightforward steps lead us to the simplified answer $\frac{35}{36}$. Remember, practice makes perfect. By regularly working through similar problems, you'll develop an intuitive grasp of fraction division and become adept at simplifying results without resorting to decimals.

Happy fraction dividing!

[Plz Helppp1 7 9 Divided By 4 5 In The Lowest Terms No](#)

Decimal Answers

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