

How Many $\frac{1}{6}$ Cup Servings Are In $\frac{3}{4}$ Cups Of Popcorn? (in Simplest Fraction Form) A $\frac{3}{2}$ B $\frac{5}{2}$ C $\frac{7}{2}$ D $\frac{9}{2}$

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Understanding the Basics of Volume and Fractions in Cooking and Snacking

When preparing snacks like popcorn, understanding how to convert and measure servings is essential for accuracy and portion control. Whether you're managing dietary intake, planning for a gathering, or simply curious about how much popcorn you have, knowing how to convert cups into smaller servings proves useful. This article will explore how many $\frac{1}{6}$ cup servings are in $\frac{3}{4}$ cups of popcorn, expressed in simplest fractional form, and will clarify the multiple-choice options provided: A) $\frac{3}{2}$, B) $\frac{5}{2}$, C) $\frac{7}{2}$, D) $\frac{9}{2}$.

Fundamentals of Volume Conversion: Cups to Smaller Servings

What is a Cup in Standard Measurement?

In cooking and food measurement, a cup is a standard unit used primarily in the United States, equivalent to 8 fluid ounces or approximately 237 milliliters. For dry ingredients like popcorn kernels, cups measure volume rather than weight, making conversions straightforward for serving sizes.

Understanding Fractional Servings

A fractional serving represents a part of a whole, expressed as a fraction. For example:

- $\frac{1}{6}$ cup indicates one-sixth of a cup.

- 3/4 cups is the same as 0.75 cups.

Understanding how to manipulate these fractions allows us to determine how many smaller servings fit into a larger quantity.

Step-by-Step Calculation: How Many 1/6 Cup Servings Are in 3/4 Cups?

To find the number of 1/6 cup servings in 3/4 cups, we essentially divide the total amount (3/4 cups) by the size of each serving (1/6 cups).

Mathematical Formula

Number of servings = Total volume / Serving size

Expressed mathematically:

Number of servings = $(3/4) \div (1/6)$

Performing the Division of Fractions

Dividing fractions involves multiplying the first fraction by the reciprocal of the second:

$$(3/4) \div (1/6) = (3/4) \times (6/1)$$

Calculating:

$$= (3 \times 6) / (4 \times 1) = 18 / 4$$

Simplify the fraction:

$$= 9 / 2$$

Result in Simplest Fraction Form

The final answer is 9/2, which is the simplest fractional form for the number of 1/6 cup servings in 3/4 cups of popcorn.

Matching the Calculation to Multiple-Choice Options

The options provided are:

- A) $\frac{3}{2}$
- B) $\frac{5}{2}$
- C) $\frac{7}{2}$
- D) $\frac{9}{2}$

From our calculation, the answer is $\frac{9}{2}$, which corresponds to option D.

Understanding the Significance of the Result

What Does $\frac{9}{2}$ Mean in Practical Terms?

- $\frac{9}{2}$ as a mixed number is $4 \frac{1}{2}$.
- This means that $\frac{3}{4}$ cups of popcorn contains the equivalent of four and a half $\frac{1}{6}$ cup servings.

Implications for Portion Control and Serving Sizes

Knowing that $\frac{3}{4}$ cups equals 4.5 servings of $\frac{1}{6}$ cup helps in:

- Planning snack portions accurately.
- Managing caloric or snack intake.
- Ensuring consistent serving sizes, especially useful for recipes or snack stations.

Additional Context: Why Use Fractional Measurements?

Fractional measurements are especially handy in cooking for precise portioning. They are also useful when:

- Measuring ingredients without digital tools.

- Adjusting recipes for different serving sizes.
- Understanding how different measurements relate to each other.

In the case of popcorn, accurately measuring servings ensures everyone gets an appropriate amount, avoiding waste or over-indulgence.

Practical Examples and Applications

Example 1: Preparing Snack Bags

Suppose you want to prepare snack bags containing exactly $\frac{1}{6}$ cup of popcorn each. If you have $\frac{3}{4}$ cups of popcorn, how many bags can you fill?

- Calculation: $\frac{3}{4} \div \frac{1}{6} = \frac{9}{2}$
- So, you can fill 4.5 bags, meaning four full bags and one half-filled bag.

Example 2: Adjusting Serving Sizes

If a recipe calls for $\frac{1}{6}$ cup of popcorn per serving, and you have $\frac{3}{4}$ cups, knowing there are $\frac{9}{2}$ servings helps you:

- Determine the total number of servings you can provide.
- Adjust portions accordingly.

Conclusion: Final Answer and Key Takeaways

The calculation clearly shows that there are $\frac{9}{2}$ (or 4.5) servings of $\frac{1}{6}$ cup in $\frac{3}{4}$ cups of popcorn. Therefore, the correct choice from the options provided is:

D) $\frac{9}{2}$

Understanding how to convert and calculate such fractions enhances your cooking and portioning skills, ensuring accurate serving sizes and efficient snack preparation.

Summary of Key Points

- To find how many smaller servings fit into a larger volume, divide the total volume by the size of each serving.
- Dividing fractions involves multiplying by the reciprocal.
- $\frac{3}{4} \div \frac{1}{6} = \frac{9}{2}$, so there are nine halves, or 4.5, servings of $\frac{1}{6}$ cup in $\frac{3}{4}$ cups.
- The correct multiple-choice answer is D) $\frac{9}{2}$.

By mastering these conversions, you can confidently measure and serve snacks like popcorn, ensuring consistency and satisfaction for all guests or family members.

Meta Description: Discover how many $\frac{1}{6}$ cup servings are in $\frac{3}{4}$ cups of popcorn, simplified into the correct fractional answer. Learn the calculation process and practical tips for portion control.

Frequently Asked Questions

How do you determine the number of $\frac{1}{6}$ cup servings in $\frac{3}{4}$ cups of popcorn?

You divide the total cups ($\frac{3}{4}$) by the size of each serving ($\frac{1}{6}$).

What is the division expression to find the number of $\frac{1}{6}$ cup servings in $\frac{3}{4}$ cups?

It is $(\frac{3}{4}) \div (\frac{1}{6})$.

How do you simplify the division of fractions $(\frac{3}{4}) \div (\frac{1}{6})$?

You multiply $(\frac{3}{4})$ by the reciprocal of $(\frac{1}{6})$, which is $(\frac{6}{1})$, so $(\frac{3}{4}) \times (\frac{6}{1})$.

What is the result of multiplying $(\frac{3}{4})$ by $(\frac{6}{1})$? in simplest form?

The product is $(3 \times 6) / (4 \times 1) = \frac{18}{4}$, which simplifies to $\frac{9}{2}$.

What is the simplified number of $\frac{1}{6}$ cup servings in

3/4 cups of popcorn?

There are $9/2$ servings.

Which choice correctly represents the number of servings in simplest fraction form?

Option D: $9/2$.

If you had to choose from options A to D, which one is correct for the number of servings?

Option D: $9/2$.

What is the mixed number form of $9/2$?

$9/2$ equals $4\frac{1}{2}$ servings.

Why is the answer $9/2$ in simplest fraction form for the number of servings?

Because dividing $3/4$ by $1/6$ results in $9/2$, which is already in simplest fractional form.

Additional Resources

Popcorn Servings Calculation: How Many $1/6$ Cup Servings Are in $3/4$ Cups?

When it comes to preparing snacks, especially popcorn, understanding measurement conversions can be surprisingly essential. Whether you're a home chef, a party host, or just someone looking to portion out snacks accurately, knowing how many smaller servings fit into a larger measurement helps in planning and presentation. In this article, we'll explore the question: How many $1/6$ cup servings are in $3/4$ cups of popcorn? We will analyze the problem step-by-step, simplify the calculation to its most basic form, and present the answer in the options provided: A) $3/2$, B) $5/2$, C) $7/2$, D) $9/2$.

Understanding the Basics: Fractions and Measurement Conversion

Before diving into the calculation, it's vital to comprehend the foundational concepts involved—particularly fractions and how they relate to measurements.

What is a Fraction?

A fraction represents a part of a whole. The numerator (top number) indicates how many parts are considered, while the denominator (bottom number) shows how many parts make up the whole.

For example:

- $\frac{1}{6}$ means one part out of six equal parts.
- $\frac{3}{4}$ means three parts out of four equal parts.

Measuring Cups and Servings

In cooking and snacking, measurements like cups and fractions are common:

- $\frac{1}{6}$ cup: a small, precise volume often used for seasoning or small snack portions.
- $\frac{3}{4}$ cups: a larger measurement, commonly used for larger servings or ingredients.

Problem Breakdown: How Many $\frac{1}{6}$ Cup Servings in $\frac{3}{4}$ Cups?

The core question is: How many times does $\frac{1}{6}$ cup fit into $\frac{3}{4}$ cups? This is a division problem where we divide the total amount by the size of each serving:

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\[
\text{Number of servings} = \frac{\text{Total amount}}{\text{Size of each serving}}
\]
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Expressed mathematically:

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\[
\text{Number of servings} = \frac{\frac{3}{4}}{\frac{1}{6}}
\]
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Step-by-Step Calculation

Let's carefully perform this calculation to arrive at the simplest fractional form.

Step 1: Write the division problem

$$\left[\frac{3}{4} \div \frac{1}{6}\right]$$

Step 2: Use the rule for dividing fractions

Dividing by a fraction is equivalent to multiplying by its reciprocal:

$$\left[\frac{3}{4} \div \frac{1}{6} = \frac{3}{4} \times \frac{6}{1}\right]$$

Step 3: Multiply the fractions

Multiplying fractions involves multiplying numerators and denominators:

$$\left[\frac{3 \times 6}{4 \times 1} = \frac{18}{4}\right]$$

Step 4: Simplify the resulting fraction

Divide numerator and denominator by their greatest common divisor (GCD), which is 2:

$$\left[\frac{18 \div 2}{4 \div 2} = \frac{9}{2}\right]$$

Thus, the total number of $\frac{1}{6}$ cup servings in $\frac{3}{4}$ cups of popcorn is $\frac{9}{2}$.

Interpreting the Result

The simplified fractional answer is $\frac{9}{2}$.

Now, let's compare this to the options provided:

- A) $\frac{3}{2}$
- B) $\frac{5}{2}$
- C) $\frac{7}{2}$
- D) $\frac{9}{2}$

Our calculation shows the correct answer is D) $9/2$.

Expressing the Answer in Different Forms

While $9/2$ is the simplest fractional form, it's often useful to interpret it as a mixed number:

$$\begin{aligned} &\backslash[\\ 9/2 &= 4 \frac{1}{2} \\ &\backslash] \end{aligned}$$

This tells us that there are four full $1/6$ cup servings and one additional half-serving in $3/4$ cups of popcorn.

Practical Implications and Usage

Understanding this measurement conversion has practical applications:

- Portion Control: If you want to serve popcorn in $1/6$ cup portions, knowing that $3/4$ cups yields 4.5 servings helps in planning.
- Recipe Scaling: Adjusting snack sizes based on guest count or dietary needs.
- Nutritional Information: Accurate measurement conversions allow for precise calorie counts and nutritional tracking.

Additional Notes on Fractional Calculations

- Always simplify the resulting fractions to their lowest terms to better understand the quantity.
- Converting improper fractions to mixed numbers makes interpretation easier, especially for larger numbers.
- Be consistent with units—cups, tablespoons, teaspoons—when converting between different measurement systems.

Summary

To summarize:

- The calculation involves dividing the total volume ($\frac{3}{4}$ cups) by the size of each serving ($\frac{1}{6}$ cups).
- Performing the division $\frac{3/4}{1/6}$ yields $\frac{9}{2}$.
- The simplified and most straightforward fractional answer is $\frac{9}{2}$.
- Therefore, there are $\frac{9}{2}$ (or four and a half) $\frac{1}{6}$ cup servings in $\frac{3}{4}$ cups of popcorn.

Final answer: D) $\frac{9}{2}$

Conclusion

Understanding how many smaller servings fit into a larger measurement is an essential skill in both cooking and snack preparation. By breaking down the problem into manageable steps and simplifying fractions, we can confidently determine that there are $\frac{9}{2}$ (or four and a half) $\frac{1}{6}$ cup servings in $\frac{3}{4}$ cups of popcorn. Whether you're portioning snacks for a movie night or scaling recipes for a party, mastering these conversions ensures accurate, efficient, and enjoyable snack preparation.

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