

Look for the Math Around You: Fractions

Fractions are everywhere around us, but we don't always notice them. We use them to measure ingredients when we cook, to calculate discounts when we shop, and to divide things fairly when we share them with friends. Fractions are a way of representing parts of a whole, and they can be used to solve a variety of problems.

Here are some examples of fractions in everyday life:



Look for the Math Around You: Fractions by Alice Aspinall

★★★★☆ 4 out of 5

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- The pizza you ordered is cut into 8 slices. If you eat 3 slices, you have eaten $\frac{3}{8}$ of the pizza.
- The recipe for your favorite cookies calls for $\frac{1}{2}$ cup of sugar. If you only have $\frac{1}{4}$ cup of sugar, you will need to double the recipe to make enough cookies.
- The sale at the store is offering 20% off all items. If a shirt costs \$20, you will save \$4 (20% of \$20) if you buy it on sale.

Fractions can be written in a variety of ways. The most common way is to write them as a numerator over a denominator, such as $1/2$ or $3/4$. The numerator tells you how many parts of the whole you have, and the denominator tells you how many parts the whole is divided into.

Fractions can also be written as decimals or percentages. A decimal is a number that is less than 1 and has a decimal point. A percentage is a number that is expressed as a fraction of 100. For example, the fraction $1/2$ can be written as the decimal 0.5 or the percentage 50%.

Fractions are a powerful tool that can be used to solve a variety of problems. By understanding how fractions work, you can make better decisions about everything from cooking to shopping to sharing.

Types of Fractions

There are many different types of fractions, but the most common are proper fractions, improper fractions, and mixed numbers.

- **Proper fractions** are fractions in which the numerator is smaller than the denominator. For example, $1/2$, $3/4$, and $5/8$ are all proper fractions.
- **Improper fractions** are fractions in which the numerator is greater than or equal to the denominator. For example, $3/2$, $4/4$, and $5/3$ are all improper fractions.
- **Mixed numbers** are fractions that have a whole number part and a fractional part. For example, $1 \frac{1}{2}$, $2 \frac{3}{4}$, and $3 \frac{5}{8}$ are all mixed numbers.

Fractions can be converted from one type to another using the following rules:

- To convert a proper fraction to an improper fraction, multiply the numerator by the denominator. For example, to convert the proper fraction $1/2$ to an improper fraction, multiply 1 by 2 to get $2/2$.
- To convert an improper fraction to a proper fraction, divide the numerator by the denominator. For example, to convert the improper fraction $2/2$ to a proper fraction, divide 2 by 2 to get $1/2$.
- To convert a mixed number to an improper fraction, multiply the whole number part by the denominator and then add the numerator. For example, to convert the mixed number $1 \frac{1}{2}$ to an improper fraction, multiply 1 by 2 to get 2 and then add 1 to get $3/2$.

Operations with Fractions

The four basic operations with fractions are addition, subtraction, multiplication, and division.

- **Addition** To add fractions with the same denominator, simply add the numerators. For example, to add the fractions $1/2$ and $3/2$, add 1 and 3 to get $4/2$. Then simplify the fraction by dividing the numerator and denominator by 2 to get $2/1$, which is equal to 2.
- **Subtraction** To subtract fractions with the same denominator, simply subtract the numerators. For example, to subtract the fraction $3/4$ from the fraction $1/4$, subtract 3 from 1 to get $-2/4$. Then simplify the fraction by dividing the numerator and denominator by 2 to get $-1/2$.

- **Multiplication** To multiply fractions, multiply the numerators and then multiply the denominators. For example, to multiply the fractions $\frac{1}{2}$ and $\frac{3}{4}$, multiply 1 by 3 to get 3 and then multiply 2 by 4 to get 8. The product is $\frac{3}{8}$.
- **Division** To divide fractions, invert the second fraction and then multiply. For example, to divide the fraction $\frac{1}{2}$ by the fraction $\frac{3}{4}$, invert $\frac{3}{4}$ to get $\frac{4}{3}$ and then multiply $\frac{1}{2}$ by $\frac{4}{3}$ to get $\frac{4}{6}$. Then simplify the fraction by dividing the numerator and denominator by 2 to get $\frac{2}{3}$.

Applications of Fractions

Fractions have a wide variety of applications in the real world. Here are a few examples:

- **Cooking** Fractions are used in cooking to measure ingredients. For example, a recipe for cookies might call for $\frac{1}{2}$ cup of sugar. This means that you need to add $\frac{1}{2}$ of a cup of sugar to the batter.
- **Shopping** Fractions are used in shopping to calculate discounts. For example, a store might be offering a 20% discount on all items. This means that you will save 20% of the original price if you buy something on sale.
- **Sharing** Fractions are used in sharing to divide things fairly. For example, if you have a pizza with 8 slices and you want to share it with 3 friends, you will need to cut each slice into 3 equal parts. This way, each person will get $\frac{8}{9}$ slices of pizza.

Fractions are a powerful tool that can be used to solve a variety of problems. By understanding how fractions work, you can make better

decisions about everything from cooking to shopping to sharing.

Fractions are an important part of mathematics. They are used to represent parts of a whole, and they can be used to solve a variety of problems. By understanding how fractions work, you can be more successful in school, work, and everyday life.



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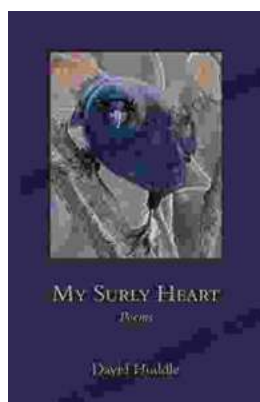
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