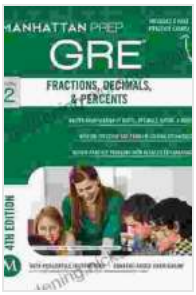
Mastering Fractions, Decimals, and Percents: A Comprehensive Guide to GRE Success



GRE Fractions, Decimals, & Percents (Manhattan Prep GRE Strategy Guides Book 2) by Manhattan Prep

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Fractions, decimals, and percents are fundamental mathematical concepts that play a significant role in the GRE's quantitative reasoning section. Understanding these topics thoroughly is crucial for achieving a high score on this critical portion of the exam. This comprehensive guide will delve into the intricacies of fractions, decimals, and percents, providing you with a deep understanding of each concept and equipping you with the skills necessary to tackle GRE math questions with confidence.

Fractions

A fraction represents a part of a whole and is written as a quotient of two integers. The top number, known as the numerator, indicates the number of parts being considered, while the bottom number, called the denominator, represents the total number of parts in the whole. For example, the fraction 1/2 represents one-half of a whole.

Simplifying Fractions

Fractions can be simplified by dividing both the numerator and denominator by their greatest common factor (GCF). The GCF is the largest number that divides both the numerator and denominator without leaving a remainder. Simplifying a fraction reduces it to its lowest terms, making it easier to perform operations.

Adding and Subtracting Fractions

To add or subtract fractions with the same denominator, simply add or subtract the numerators while keeping the denominator the same. For example, 1/2 + 1/4 = 3/4. If the fractions have different denominators, you must first find a common denominator. The common denominator is the least common multiple (LCM) of the denominators. Once you have found the common denominator, convert both fractions to equivalent fractions with the same denominator and then add or subtract the numerators.

Multiplying and Dividing Fractions

To multiply fractions, simply multiply the numerators and multiply the denominators. For example, (1/2) x (3/4) = (1 x 3) / (2 x 4) = 3/8. To divide fractions, flip the second fraction and multiply. For example, (1/2) ÷ (3/4) = (1/2) x (4/3) = 2/3.

Decimals

A decimal is a way of representing a fraction using a base-10 number system. Decimals are written with a decimal point that separates the whole number part from the fractional part. For example, the decimal 0.5 represents one-half.

Converting Fractions to Decimals

To convert a fraction to a decimal, divide the numerator by the denominator. For example, 1/2 ÷ 2 = 0.5. If the division does not result in a terminating decimal, the decimal will continue indefinitely.

Converting Decimals to Fractions

To convert a decimal to a fraction, place the decimal over a power of 10 with a denominator equal to the number of decimal places. For example, 0.5 = 5/10 = 1/2.

Percents

A percent is a way of expressing a fraction as a hundredth. Percents are written using the percent sign (%). For example, 50% represents fifty-hundredths, which is equivalent to 1/2.

Converting Fractions to Percents

To convert a fraction to a percent, multiply the fraction by 100. For example, 1/2 x 100 = 50%.

Converting Decimals to Percents

To convert a decimal to a percent, multiply the decimal by 100. For example, 0.5 x 100 = 50%.

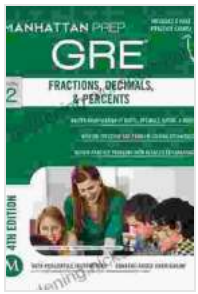
Converting Percents to Fractions and Decimals

To convert a percent to a fraction, divide the percent by 100. For example, 50% ÷ 100 = 1/2. To convert a percent to a decimal, divide the percent by 100. For example, 50% ÷ 100 = 0.5.

Practice Exercises

1. Simplify the fraction 12/18.
2. Add the fractions 1/4 and 3/8.
3. Subtract the fraction 1/3 from the fraction 5/6.
4. Multiply the fractions 2/3 and 3/4.
5. Divide the fraction 1/2 by the fraction 1/4.
6. Convert the decimal 0.75 to a fraction.
7. Convert the fraction 3/5 to a decimal.
8. Convert the percent 25% to a fraction.
9. Convert the percent 60% to a decimal.
10. Convert the fraction 5/8 to a percent.

Fractions, decimals, and percents are essential concepts for success on the GRE's quantitative reasoning section. By mastering these topics, you will gain a strong foundation in mathematics and develop the skills necessary to solve a wide range of GRE math questions with accuracy and confidence. Utilize the explanations, examples, and practice exercises provided in this guide to enhance your understanding and prepare effectively for the GRE. Remember, with consistent practice and a thorough grasp of these concepts, you can achieve your GRE goals and excel in the quantitative reasoning section.



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