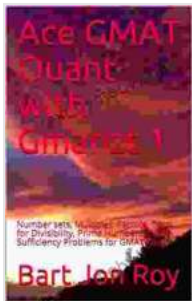# Number Sets Multiples Factors Tests For Divisibility Prime Numbers Data

Numbers are the building blocks of mathematics and form the foundation of our understanding of the world. Number theory, the study of the properties of numbers, is a vast and fascinating field that has captivated mathematicians for centuries. In this article, we will delve into the exciting realm of number theory and explore some of its fundamental concepts: number sets, multiples, factors, tests for divisibility, and prime numbers.

Ace GMAT Quant with Gmanzt 1: Number sets, Multiples, Factors, Tests for Divisibility, Prime Numbers, Data Sufficiency Problems for GMAT Quant

★ ★ ★ ★ ★   5 out of 5

Language	: English
File size	: 1618 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 143 pages
Lending	: Enabled

FREE

DOWNLOAD E-BOOK

Number Sets

A number set is a collection of numbers that share common properties. The most basic number sets are the natural numbers, whole numbers, integers, rational numbers, and real numbers.

* **Natural numbers** are the positive integers starting from 1: {1, 2, 3, 4, 5, ...}. * **Whole numbers** include 0 and the natural numbers: {0, 1, 2, 3, 4, 5, ...}. * **Integers** are the whole numbers and their negatives: {...,-3, -2, -1, 0, 1, 2, 3, ...}. * **Rational numbers** are numbers that can be expressed as a fraction of two integers: {..., -2/3, -1/2, 0, 1/2, 2/3, ...}. * **Real numbers** include all rational and irrational numbers, which are numbers that cannot be expressed as a fraction: {..., -π, -√2, -1, 0, 1, √2, π, ...}.

Multiples

A multiple of a number is a number that is obtained by multiplying that number by an integer. For example, 12 is a multiple of 3 because 12 = 3 × 4.

Every number has an infinite number of multiples. The multiples of a number can be found by multiplying that number by any integer. For example, the multiples of 5 are: 5, 10, 15, 20, 25, ...

Factors

A factor of a number is a number that divides evenly into that number. For example, 4 is a factor of 12 because 12 ÷ 4 = 3.

Every number has at least two factors: 1 and itself. Some numbers, like 12, have many factors: 1, 2, 3, 4, 6, and 12.

Tests for Divisibility

There are several tests for divisibility that can be used to determine if a number is divisible by another number. These tests are based on the properties of numbers and can be very useful for quickly determining divisibility.

Some common tests for divisibility include:

* **Divisibility by 2:** A number is divisible by 2 if its last digit is 0, 2, 4, 6, or 8. * **Divisibility by 3:** A number is divisible by 3 if the sum of its digits is divisible by 3. * **Divisibility by 4:** A number is divisible by 4 if the last two digits are divisible by 4. * **Divisibility by 5:** A number is divisible by 5 if its last digit is 0 or 5. * **Divisibility by 6:** A number is divisible by 6 if it is divisible by both 2 and 3. * **Divisibility by 9:** A number is divisible by 9 if the sum of its digits is divisible by 9. * **Divisibility by 10:** A number is divisible by 10 if its last digit is 0.

Prime Numbers

A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. For example, 7 is a prime number because its only factors are 1 and 7.

The first few prime numbers are: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, ...

Prime numbers are essential in number theory and have many applications in mathematics, computer science, and other fields.

In this article, we have explored the fundamental concepts of number sets, multiples, factors, tests for divisibility, and prime numbers. These concepts form the foundation of number theory and are essential for understanding the properties of numbers. By mastering these concepts, you will gain a deeper appreciation for the beauty and power of mathematics.

Ace GMAT Quant with Gmanzt 1: Number sets, Multiples, Factors, Tests for Divisibility, Prime

Numbers, Data Sufficiency Problems for GMAT Quant

★★★★★ 5 out of 5

Language   : English
File size   : 1618 KB
Text-to-Speech   : Enabled
Screen Reader   : Supported
Enhanced typesetting : Enabled
Word Wise   : Enabled
Print length   : 143 pages
Lending   : Enabled

FREE **DOWNLOAD E-BOOK** 📄

20 Must Visit Attractions In La Paz, Bolivia

La Paz, Bolivia is a city of contrasts, where the modern and the traditional meet. From its stunning mountain views to its vibrant indigenous...

Ultimate Guide to Special Forces Skills, Tactics, and Techniques

The world of special forces is a realm of extraordinary abilities, unparalleled courage, and unwavering dedication. These elite units operate...