Student Name: _____	**Class:** _____
Student ID: _____	**Date:** _____

Assessment Details

Duration: 45 minutes	**Total Marks:** 100
Topics Covered:	• Recognizing and writing decimals using place value understanding • Partitioning decimals into tenths and hundredths • Identifying equivalent decimals • Comparing decimals using greater than, less than, or equal to

Instructions to Students:

1. Read all questions carefully before attempting.
2. Show all working out - marks are awarded for method.
3. Calculator use is permitted except where stated otherwise.
4. Write your answers in the spaces provided.
5. If you need more space, use the additional pages at the end.
6. Time management is crucial - allocate approximately 1 minute per mark.

Section A: Multiple Choice [20 marks]

Question 1 **[2 marks]**

What is the decimal equivalent of 3/10?

A) 0.1

B) 0.3

C) 0.5

D) 0.9

Question 2 **[2 marks]**

Which of the following decimals is equal to 0.5?

A) 1/2

B) 1/5

C) 2/5

D) 3/5

Question 3 **[2 marks]**

What is the place value of the digit 5 in the decimal 0.56?

A) Tenths

B) Hundredths

C) Thousandths

D) Ten-thousandths

Question 4 **[2 marks]**

Which decimal is greater: 0.4 or 0.45?

A) 0.4

B) 0.45

C) Equal

D) Cannot be determined

Question 5 **[2 marks]**

What is the decimal equivalent of 2 3/10?

A) 2.3

B) 2.5

C) 2.7

D) 2.9

Section B: Short Answer Questions [30 marks]

Question 6 **[5 marks]**

Write the decimal 0.25 as a fraction.

Question 7 **[5 marks]**

Partition the decimal 0.75 into tenths and hundredths.

Question 8 **[5 marks]**

Identify the equivalent decimal for 3/5.

Question 9 **[5 marks]**

Compare the decimals 0.2 and 0.15 using greater than, less than, or equal to.

Question 10 **[5 marks]**

Write the decimal 1 1/2 as a mixed number.

Section C: Word Problems [30 marks]

Question 11 **[5 marks]**

A book costs $15.99. If a 10% discount is applied, how much will you pay?

Question 12 **[5 marks]**

A water tank can hold 250 liters of water. If 175 liters of water are already in the tank, what fraction of the tank is filled?

Question 13 **[5 marks]**

A recipe requires 2 3/4 cups of flour. If you only have 2 1/4 cups of flour, how much more flour do you need?

Question 14 **[5 marks]**

A car travels 250 miles in 5 hours. What is the average speed of the car in miles per hour?

Question 15 **[5 marks]**

A group of friends want to share some candy equally. If they have 2 1/2 pounds of candy and there are 5 friends, how much candy will each friend get?

Section D: Decimal Operations [20 marks]

Question 16 **[4 marks]**

Add 0.5 and 0.2.

Question 17 **[4 marks]**

Subtract 0.3 from 0.9.

Question 18 **[4 marks]**

Multiply 0.4 by 2.

Question 19 **[4 marks]**

Divide 1.2 by 0.6.

Question 20 **[4 marks]**

Round 0.456 to the nearest tenth.

Additional Activities [20 marks]

Activity 1 [5 marks]

Create a number line with decimals from 0 to 1.

Activity 2 [5 marks]

Write a short story using decimals to describe measurements or quantities.

Activity 3 [5 marks]

Create a chart to compare the decimal equivalents of fractions.

Activity 4 [5 marks]

Design a real-world scenario where decimals are used to solve a problem.

Answer Key

Question 1: B) 0.3	**Question 2:** A) 1/2
Question 3: A) Tenths	**Question 4:** B) 0.45
Question 5: A) 2.3	**Question 6:** 1/4
Question 7: 0.7 + 0.05	**Question 8:** 0.6
Question 9: 0.2 > 0.15	**Question 10:** 1 1/2
Question 11: $14.39	**Question 12:** 175/250 = 0.7
Question 13: 1/2 cup	**Question 14:** 50 miles per hour
Question 15: 1/2 pound	**Question 16:** 0.7
Question 17: 0.6	**Question 18:** 0.8
Question 19: 2	**Question 20:** 0.5

Assessment Rubric

Multiple Choice Questions: 40 points	**Short Answer Questions:** 30 points
Word Problems: 30 points	**Decimal Operations:** 20 points
Additional Activities: 20 points	**Total:** 100 points

Note to Teachers

The assessment is designed to be completed within 45 minutes.

Encourage students to show their work and explain their reasoning.

Use the answer key and rubric to assess student understanding and provide feedback.

Decimal Operations with Multi-Digit Numbers

When performing decimal operations with multi-digit numbers, it is essential to line up the decimal points and apply the rules of addition, subtraction, multiplication, and division. For example, to add 45.27 and 23.91, we line up the decimal points and add as follows:

Example

45.27 + 23.91 = 69.18

Similarly, to subtract 17.43 from 43.21, we line up the decimal points and subtract as follows:

Example

43.21 - 17.43 = 25.78

When multiplying multi-digit decimals, we multiply as if the numbers were whole numbers and then count the total number of decimal places in the factors to determine the placement of the decimal point in the product. For example, to multiply 4.23 and 2.17, we multiply as follows:

Example

4.23 x 2.17 = 9.1991

When dividing multi-digit decimals, we divide as if the numbers were whole numbers and then place the decimal point in the quotient based on the number of decimal places in the dividend. For example, to divide 45.27 by 3.17, we divide as follows:

Example

45.27 ÷ 3.17 = 14.27

Real-World Applications of Decimals

Decimals have numerous real-world applications in fields such as finance, science, engineering, and everyday life. For example, in finance, decimals are used to represent interest rates, investment returns, and currency exchange rates. In science, decimals are used to measure quantities such as temperature, pressure, and velocity.

Case Study

A company is offering a 10.5% discount on all products. If a product originally costs $45.99, how much will it cost after the discount?

Solution

Discount = 10.5% of $45.99 = 0.105 x $45.99 = $4.83. New price = $45.99 - $4.83 = $41.16

In everyday life, decimals are used to measure quantities such as weight, length, and time. For example, a recipe may call for 2.5 cups of flour, or a runner may complete a race in 23.45 minutes.

Example

A person weighs 65.23 kg. If they lose 3.17 kg, what is their new weight?

New weight = 65.23 kg - 3.17 kg = 62.06 kg

Decimal Word Problems

Word problems involving decimals require the application of mathematical operations to real-world scenarios. For example, a store is having a sale on shirts, with a 15.6% discount on all prices. If a shirt originally costs $23.99, how much will it cost after the discount?

Example

Discount = 15.6% of $23.99 = 0.156 x $23.99 = $3.75. New price = $23.99 - $3.75 = $20.24

Another example is a person who invests $1,000 at an annual interest rate of 4.2%. How much will they have after 5 years?

Example

Interest = $1,000 x 4.2% x 5 = $1,000 x 0.042 x 5 = $210. Total amount = $1,000 + $210 = $1,210

These types of problems require the application of mathematical operations, such as multiplication and division, to real-world scenarios involving decimals.

Conclusion

In conclusion, decimals are a fundamental concept in mathematics, with numerous real-world applications. Understanding decimals and how to perform operations with them is essential for success in various fields, including finance, science, engineering, and everyday life.

This document has provided a comprehensive overview of decimals, including their definition, notation, and operations. It has also explored real-world applications and word problems involving decimals.

Summary

Decimals are a type of number that represents a part of a whole. They are denoted by a decimal point and can be positive or negative. Decimals can be added, subtracted, multiplied, and divided using various rules and operations.

It is essential to practice and apply the concepts learned in this document to real-world scenarios to develop a deeper understanding of decimals and their applications.

Glossary

The following is a list of key terms and definitions related to decimals:

Glossary

Decimal: a type of number that represents a part of a whole, denoted by a decimal point.

Decimal point: a symbol (.) used to separate the whole part from the fractional part of a decimal number.

Place value: the value of a digit depending on its position in a decimal number.

Understanding these terms and concepts is essential for working with decimals and applying them to real-world scenarios.

References

The following sources were used to develop this document:

References

National Council of Teachers of Mathematics. (2014). Principles to Actions: Ensuring Mathematical Success for All.

Common Core State Standards Initiative. (2010). Common Core State Standards for Mathematics.

These sources provide a comprehensive overview of the concepts and principles related to decimals and their applications.

PLANIT TEACHERS

Decimal Numbers Assessment

Student Name: _____	**Class:** _____
Student ID: _____	**Date:** _____

Assessment Details

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