

Student Name: _____

Class: _____

Due Date: _____

Introduction

This homework sheet is designed to reinforce the understanding of fractions and decimals, focusing on core operations such as addition, subtraction, multiplication, and division, and to explore their real-world applications.

Section 1: Fraction Operations

Essential Understanding:

- Types of fractions (proper, improper, mixed)
- Adding and subtracting fractions with like and unlike denominators
- Multiplying and dividing fractions
- Simplifying fractions

Complete these concept checks:

1. Simplify the following fraction addition and subtraction problems:

- $\frac{1}{4} + \frac{1}{4} =$
- $\frac{3}{8} - \frac{1}{8} =$
- $\frac{2}{3} + \frac{1}{6} =$

2. Simplify the following fraction multiplication and division problems:

- $\frac{1}{2} * \frac{3}{4} =$
- $\frac{2}{3} / \frac{2}{3} =$
- $\frac{3}{4} * \frac{2}{5} =$

Essential Understanding:

- Types of decimals (terminating, repeating, non-repeating)
- Adding and subtracting decimals
- Multiplying and dividing decimals
- Rounding decimals

Complete these concept checks:

1. Solve the following decimal addition and subtraction problems:

- $0.5 + 0.2 =$
- $1.8 - 0.9 =$
- $2.4 + 1.1 =$

2. Solve the following decimal multiplication and division problems:

- $0.5 * 0.2 =$
- $1.2 / 0.4 =$
- $3.6 / 0.6 =$

Section 3: Real-world Applications

Choose one of the following scenarios and solve the problem. Be sure to show all your work and explain your reasoning.

1. **Cooking:** A recipe for making cookies calls for $\frac{3}{4}$ cup of sugar. If you want to make half the recipe, how much sugar will you need?

2. **Finance:** A car is on sale for \$12,000. If a 10% deposit is required, how much will you need to pay as a deposit? Express your answer as a decimal and a fraction.

3. **Measurement:** A room is $12\frac{1}{2}$ feet long. If you want to put a border around the room that is $\frac{1}{4}$ foot wide, how many feet of border will you need? Assume the room is a perfect rectangle.

Choose any combination:

1. **Research Project:** Find and present on a real-world application of fractions and decimals that is not covered in class. This could be in fields like science, engineering, economics, etc.

2. **Create a Problem:** Design a word problem that involves fractions and decimals and solve it. Then, exchange with a classmate to solve each other's problems.

Success Criteria

To successfully complete this assignment, you must:

- Accurately solve the fraction and decimal operations
- Correctly apply fractions and decimals to real-world problems
- Demonstrate understanding through clear explanations and work
- Complete the assignment within the given time frame

Parent/Guardian Notes

Support: Encourage your child to read the instructions carefully and ask for help if they are unsure about any part of the assignment.

Resources: Ensure your child has access to a calculator, internet (if needed), and a quiet workspace.

Time Management: Help your child manage their time effectively to complete the assignment within 45-60 minutes.

Review: Take a few minutes to review your child's work, discussing any challenges they faced and how they overcame them.

Conclusion

This homework sheet is designed to help you reinforce your understanding of fractions and decimals, and to explore their real-world applications. Remember to show all your work, explain your reasoning, and complete the assignment within the given time frame. Good luck!