Exploring MCM and MCD: A Homework Sheet

Student Name: _____

Class: _____

Due Date: _____

Introduction

Welcome to this homework sheet on Maximum Common Multiple (MCM) and Maximum Common Divisor (MCD)! In this activity, you will learn how to calculate MCM and MCD, and apply these concepts to solve problems. This sheet is designed to help you understand the importance of MCM and MCD in mathematics and real-world applications.

Understanding MCM and MCD

What is MCM?

MCM is the smallest multiple that is a common multiple of two or more numbers. For example, the multiples of 3 are 3, 6, 9, 12, ... and the multiples of 4 are 4, 8, 12, 16, ... The smallest number that appears in both lists is 12, so the MCM of 3 and 4 is 12.

What is MCD?

MCD is the largest number that divides two or more numbers without leaving a remainder. For example, the factors of 12 are 1, 2, 3, 4, 6, 12, and the factors of 18 are 1, 2, 3, 6, 9, 18. The greatest number that appears in both lists is 6, so the MCD of 12 and 18 is 6.

Calculating MCM and MCD

Exercise 1: Calculate MCM

1. Calculate the MCM of 6 and 8
2. Calculate the MCM of 9 and 12
3. Calculate the MCM of 7 and 11

Exercise 2: Calculate MCD

1. Calculate the MCD of 12 and 15
2. Calculate the MCD of 18 and 24
3. Calculate the MCD of 20 and 25

Word Problems

Exercise 3: Word Problems

1. Tom has 12 boxes of pencils and Alex has 18 boxes of pencils. What is the least common multiple of the number of boxes they have?

2. A bookshelf has 5 shelves, and each shelf can hold 8 books. If the bookshelf is currently empty, how many books can be placed on it in total?

3. A group of friends want to share some candy equally. If they have 48 pieces of candy and there are 8 friends, how many pieces of candy will each friend get?

Real-World Applications

Exercise 4: Real-World Applications

1. A musician wants to find the least common multiple of two time signatures to synchronize their rhythms. If the time signatures are 3/4 and 4/4, what is the least common multiple?

2. An architect wants to design a building with symmetrical dimensions. If the dimensions are 12 meters and 18 meters, what is the greatest common divisor?

Exercise 5: Games and Puzzles

1. Find the MCM of 3 and 4 using a diagram.

2. Find the MCD of 12 and 18 using a chart.

Conclusion

Congratulations on completing this homework sheet! You have learned how to calculate MCM and MCD, and apply these concepts to solve problems. Remember that MCM and MCD are essential concepts in mathematics and have many real-world applications.

Assessment

This homework sheet is designed to assess your understanding of MCM and MCD. Please submit your work to your teacher for feedback and assessment.

Extension Activities

Choose any combination:

1. Design and explain a mathematical model to calculate MCM and MCD.

2. Research and present on a real-world application of MCM and MCD.

Final Thoughts

We hope you enjoyed this homework sheet on MCM and MCD! Remember to practice and apply these concepts to become proficient in mathematics.