Objective   **Least Common and Greatest Common Factor**

Warm-Up

Write the prime factorization of each number.

1. 15

3. 18

2. 66

4. 78

Remember that common factors help you think about how to divide, or share things equally. Common multiples help you think about how things with different cycles can occur at the same time.

4. The students in Mr. Michael's art class are decorating a booth for Harvest Day. They have blue cloth that is 60 inches long, gold cloth that is 48 inches long, and white cloth that is 72 inches long. They want to cut all of the cloth into pieces of equal length.

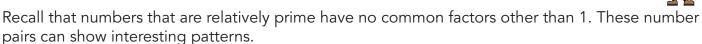**a. What is the greatest possible length of the pieces without having any cloth left over? Explain your reasoning.**

b. How many pieces of each color cloth will they have?

5. Boxes that are 16 inches tall are being stacked next to boxes that are 20 inches tall.

a. What is the shortest height at which the two stacks will be the same height? Explain your reasoning.

b. How many boxes will be in each stack?

Recall that numbers that are relatively prime have no common factors other than 1. These number pairs can show interesting patterns.

1. For each pair of numbers, determine their product, their least common multiple, and their greatest common factor.

a. 12 and 10

b. 9 and 15

c. 9 and 10

d. 5 and 9

2. Consider the GCF and LCM of the pair 9 and 10 and the pair 5 and 9.

a. What relationship do you notice between the product, LCM, and GCF of the pairs of numbers?

b. Write a sentence to describe your conjecture. Test your conjecture by determining the product, LCM, and GCF of additional pairs of numbers between 1 and 20.

In Summary

Answer each question to summarize what you know about greatest common factors and least common multiples.

1. Can you always determine the greatest common factor of any two numbers? Explain your reasoning.

2. If the greatest common factor of two numbers is 1, what can you say about the numbers?

3. Can you always determine the least common multiple of any two numbers? Explain your reasoning.

4. If the least common multiple of two numbers is the product of those numbers, what can you say about the two numbers?

5. How can you use the GCF and the Distributive Property to rewrite the sum of two numbers?

Name: _____ Date: _____ Class: _____

Objective   Least Common and Greatest Common Factor

Find the Least Common Multiple (LCM) and the Greatest Common Factor

1. 33 , 24

2. 6 , 33

3. 6 , 30

4. 16 , 12

66