**Lesson 13 Notes: Greatest Common Factor**

**Fundamental Theorem of Arithmetic**

Every composite whole number can be expressed as the product of primes in exactly one way, except for the order of the factors of the product.

**PRIME Numbers**

Use the Sieve of Eratosthenes

Use Divisibility Rules

Use Prime Number Test – check up to square root

**Greatest Common Factor**

For any two nonzero whole numbers a and b, the greatest common factor, written GCF (a, b) is the greatest factor (divisor) of both a and b.

How do you find GCF?

1. Find all factors of both numbers
2. Select the factors that are common to both numbers
3. Choose the greatest of these common factors

Another way to find GCF:

1. Find the prime factorization of both numbers
2. Select the prime factors that are common to both numbers
3. MULTIPLY the common prime factors together to get the GCF

**Example:** Find the Greatest Common Factor for the numbers. Show your work!

**Example A:**  **Example B:**

GCF(24,36) GCF(245,315)

**Example C:** **Example D:**

GCF(180,220) GCF (156,198)