Prime Factorization & GCF

A PRIME NUMBER is an integer greater than 1 with exactly two positive factors, 1 and the number itself.

A COMPOSITE NUMBER is an integer greater than 1 with more than two positive factors. For example, 4, 6, 9, and 10 are composite numbers.

THE NUMBER 1 is neither prime nor composite. **WHY????**

Which numbers from 10 to 20 are prime?

Which are composite?

Oooh, oooh! I know, I knooooow!!!

Finding Prime Factorizations

Writing a composite number as a product of its prime factors shows the **PRIME FACTORIZATION.** Prime factorizations can be displayed using a factor tree.

2 EXAMPLE Use a factor tree to write the prime factorization of 273.

Finding the GCF

As you may remember, factors that are the same for two or more number or expressions are common factors. The greatest of these common factors is called the GREATEST COMMON FACTOR, or GCF.

3 EXAMPLE Find the GCF of each pair of numbers or expressions.

a. 24 and 30

b. $36ab^2$ and $81b$