Name_____

GCF and LCM

The Greatest Common Factor - is the largest factor two or more numbers have in common. ***All numbers will have 1 in common*** There are two methods for finding GCF:

1) List the factors of the numbers then choose the largest

Example: 12 and 18

12 = 1,2,3,4,6,12
18 = 1,2,3,6,9,18

The GCF of 12 and 18 is 6.

2) The other method involves prime numbers and prime factorization.
a) list the prime factors of the numbers using a factor tree
b) If a number appears on both lists, circle both numbers
c) Multiply one of each pair of circled numbers and that is the GCF

Example: 36 and 90

The prime factors of 36 = 2 • 2 • 3 • 3
The prime factors of 90 = 2 • 3 • 3 • 5

Since they have 2, 3, and 3 in common, we multiply 2 • 3 • 3 and the GCF is 18.

****If there are no numbers in common on both lists then the GCF is 1**

Multiples

The first 5 multiples of 7 are = 7, 14, 21, 28, 35

You get that by going:

7 • 1 = 7	7 • 3 = 21	7 • 5 = 35
7 •2 = 14	7 • 4 = 28	

The first 6 multiples of 20 are = 20, 40, 60, 80. 100, 120

You get that by going:

20 • 1 = 20	20 • 3 = 60	20 • 5 = 100
20 • 2 = 40	20 • 4 = 80	20 • 6 = 120

Least Common Multiple - the smallest **non zero** multiple that two or more numbers have in common.

There are two methods for finding LCM.

1) write out the multiples of the numbers and choose the smallest multiple in common that is greater than zero

Example: Find the LCM of 18 and 27

The multiples of 18 are = 18, 36, 54, 72, 90
The multiples of 27 are = 27, 54, 81 **The LCM = 54**