GCF and LCM

GCF (Greatest Common Factor) or HCF (Highest Common Factor) of two or more non-zero integers is the largest integer that divides those numbers evenly. For example, the GCF of 12 and 32 is 4, and the GCF of 15, 12, and 18 is 3.

LCM (Least Common Multiple) of two or more non-zero integers is the smallest integer that can be divided evenly by any of those numbers. For example, the LCM of 12 and 32 is 96, and the LCM of 15, 12, and 18 is 180.

The product of two numbers is equal to the product of their LCM and GCF.

Thus 12 x 32 = 4 x 96

This relationship does not hold true in case of more than two numbers.

12 — 24, 36, 48, 60, 72, 84, 96, 108, 120, 144, ... 192

32 — 32, 64, 96, 128, ... — 192

20, 45

GCF = 5

LCM = 180

5	20, 45
	4, 9

5 x 4 x 9 = 180

Prime factorization

2, 3, 5, 7, 11, 13 ....

2	12, 18, 24
3	6, 9, 12
2	2, 3, 4
	1, 3, 2

GCF = 2 x 3 = 6

2 x 3 x 2 x 1 x 3 x 2 = 72

LCM = 72