The HCF(highest common factor) of two (or more) numbers is the highest number that will divide into each of them exactly.

the HCF of 15, 25, 40 is 5

example#1 - find the HCF of the following: 36, 50

First find the factors by dividing the numbers by prime numbers, 2, 3, 5 etc. to reduce them to '1',

2	36
2	18
3	9
3	3
	1

2	50
5	25
5	5
	1

36 = 3 x 3 x 2 x 2

50 = 2 x 5 x 5

The number that divides into both is 2 .

36 = 3 x 3 x 2 x 2 (divides 3 x 3 x 2 =18 times)

50 = 2 x 5 x 5 (divides 5 x 5 = 25 times)

So the HCF of 36 & 50 is ...2

example#2 - find the HCF of the following: 54, 96

First find the factors by dividing the numbers by prime numbers, 2, 3, 5 etc. to reduce them to '1',

2	54
3	27
3	9
3	3
	1

2	96
2	48
2	24
2	12
2	6
3	3
	1

54 = 2 x 3 x 3 x 3

96 = 2 x 2 x 2 x 2 x 2 x 3

The number that divides into both is 2 x 3 .

54 = 2 x 3 x 3 x 3

(divides 3 x 3 = 9 times)

96 = 2 x 2 x 2 x 2 x 2 x 3

(divides 2 x 2 x 2 x 2 = 16 times)

So the HCF of 54 & 96 is ...2 x 3 = 6

example#3 - find the HCF of the following: 48, 256

First find the factors by dividing the numbers by prime numbers, 2, 3, 5 etc. to reduce them to '1',

2	48
2	24
2	12
2	6
3	3
	1

2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

48 = 2 x 2 x 2 x 2 x 3

256 = 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2

The number that divides into both is 2 x 2 x 2 x 2 .

48 =2 x 2 x 2 x 2 x 3 (divides 3 times)

256 = 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 (divides 2 x 2 x 2 x 2 = 16 times)

So the HCF of 48 & 256 is .... 2 x 2 x 2 x 2 = 16