

**Divisibility Rules based on factors and Multiple, co -prime**

1) if a number is divisible by another number then it is divisible by each of the factors of that number  
**Example**  
36, is divisible by 18  
Now if we find factors of 18 i.e., 1,2 ,3,4,9,18  
So, 36 is also divisible by 1,2 ,3,4,9,18  
2) If a number is divisible by two co-prime numbers then it is divisible by their product also  
**Example**  
45  
It is divisible by 3 (4+5=9)  
It is divisible by 5  
Since 3,5 are coprime. Now the product is 3 X5=15. Now it is divisible by 15 also  
3) If two given numbers are divisible by a number, then their sum is also divisible by that number.  
**Example**  
15 is divisible by 3  
 9 is divisible by 3  
Sum = 15+9 =24   
We can see that it is also divisible by 3  
4) If two given numbers are divisible by a number, then their difference is also divisible by that number  
**Example**  
15 is divisible by 3  
9 is divisible by 3  
Difference = 15 - 9 =6   
We can see that it is also divisible by 3

**Question:**A number is divisible by both 5 and 12. By which other number will that number be always divisible?

***Solution***: The number is divisible by 5 and 12.

Since 5 and 12 are co-prime numbers so the number must be divisible by the product 5 × 12 = 60.

So, the given number will always be divisible by 60.