1. **Theorem**: Given a number N, let d be a divisor of N. Then the number of pairs {a,N}, where 1≤a≤N and gcd(a,N)=d, is ϕ(N/d).
2. Approximate number of primes under n= (n/ln(n))
3. Approximate upper limit of number of divisor =2
4. Diphonite eqn gulai negative number niye hisab korte hbe (see hyperbolic eqn in khata)
5. Once we find a pair (x,y) using ext\_gcd, we can generate infinite pairs of Bezout coefficients using the formula:

(x+(k\*b)/gcd(a,b),y−(k\*a)/gcd(a,b))

1. **Goldbach’s Conjecture:**  
   For any integer n (n ≥ 4) there exist two prime numbers p1 and p2 such that p1 + p2 = n.
2. For a given positive integer n (0 < n < 231) we need to find the number of such m that 1 ≤ m ≤ n, GCD(m, n) ≠ 1 and GCD(m, n) ≠ m

n – φ(n) – (a1 + 1) \* (a2 + 1) \* … \* (ak + 1) + 1

1. Summation of any series with equal interval like:

2+4+5+6 or 3+6+9+12 is equal

Sum=n\*(first number+last number)/2

1. Upper limit for n\*(n+1)/2 is 1414213563
2. **Right Angle Triangle :**   
   If the given side is an even number, then find (N^2)/4. The integer before and after this value will make a right angled triangle. Example, if 8 is the given side, then (8^2)/4 = 16. So the other two sides of the right angled triangle will be 15 and (edit)17.

Now if the given side is an odd number, then find (N^2)/2. Here also, the integers before and after the found out value will make the right angled triangle. For example, if 3 is the number. Then (3^2)/2 = 4.5 So the other two sides will be 4 and 5.

1. (a^(b^c))%mod=(a^(b^c)%phi(m))%m **(provided a and m coprime)**
2. a^x % m = ((a%m) ^ (x%phi(m))) %m **(provided a and m coprime)**