# Factor

**Find some of all factor for an integer n**

for(i=1; i\*i<=n; i++){

if(n%i==0){

sum += i;

if((n%i) != i) sum+=i;

}

}

**Refer:**

<https://www.youtube.com/watch?v=FcsUvBywY1U&list=PLN4aKSfpk8TQDJz7KLiwGFgnoUUwzfl1i>

# Prime Number

Check Prime:

bool checkprime(int n){

if(n<2) return false;

if(n == 2) return true;

if(n%2==0) return false;

for(int i=3; i\*i<=n; i+=2){

if(n%i==0) return false;

}

return true;

}

Sieve:

int N=5000000;

bool seive[5000001];

vector<int> prime;

void createseive(){

for(int i=2; i<=N; i++) seive[i]=true;

for(int i=2; i\*i<=N; i++){

if(seive[i]==true){

prime.push\_back(i);

for(int j=i\*i; j<=N; j+=i) seive[j]=false;

}

}

}

**Find prime factors of a number:**

for(i=2; i<=sqrt(n); i++){

if(n%i==0) list.add(i);

while(n%i==0) n/=I;

}

If(n!=1) list.add(n);

**Smallest Prime Factor(SPF):**

spf[10^5+1]

for(int i=1; i<=10^5; i++) spg[i]=i;

for(int i=2; i\*i<=10^5; i++){

if(spf[i] == i){

for(int j=i\*I; j<=10^5; j+=i){

if(spf[j]==j) spf[j]=I;

}

}

}

for(int i=0; i<quey.size(); i++){

n = query[i]

while(n!=1){

print(spf[n]);

n/=spf[n];

}

}