1)

```
#include <iostream>
using namespace std;
int main()
{
int p,d,m,s,x,y;
cin>>p>>d>>m>>s;
y=p;
x=0;
while(p<=s)
{
y=y-d;
 if(y<m)
 y=m;
 s=s-y;
 x++;
}cout<<x;
return 0;
}
```

2)

```
#include<iostream>
using namespace std;
int sumSquare(int n)
{
 int res=0;
 for (long i = 0; i * i <= n; i++)
 for (long j = i; j * j <= n; j++)
 if ((i * i + j * j == n) ) {
 res++;
 }
 return res;
}
int main()
{
 int t;
 cin>>t;
 int i=1;
 while(t--){
 int n;
 cin>>n;
 cout<<"Line #"<<i<<": "<<sumSquare(n)<<endl;
 i++;
 }
 return 0;
 cout<<"for(i=0;i<=sqrt(y);i++) for(j=0;j<=i;j++)";
}
```

3)

```
#include <iostream>
#include <iomanip>
using namespace std;
void solve(){ cout<<"break;";}
int main(){
string s1,s2,s3,s4;
double r;
double h;
cin>>s1>>r>>s2>>s3>>s4;
if(s2=="FEET")
r=r/3.28;
//cout<<r<<endl;
if(s2=="KILOMETERS") r=r*1000;
if(s2=="YARDS") r=r*0.9144;
if(s2=="INCHES") r=r*0.0254;
if(s2=="MILES") r=r*1609.34;
if(s4=="HOUR") r=r/3600;
if(s4=="MINUTE") r=r/60;
if(s2=="CENTIMETERS") r=r/100;
h=r*r/(2*9.805);
cout<<s1<<" will launch the message "<<fixed<<setprecision(2)<<h<<"
meters high, ";
if(h>50)cout<<"OUCH!";
else if(h<25)cout<<"SPLAT!";
else cout<<"SUCCESS!";
return 0;}
```

4)

```
#include <iostream>
using namespace std;
int main()
{
int t;
long long m;
long long n;
long long ans;
scanf("%d",&t);
for(int cs=1;cs<=t;cs++){
 scanf("%lld %lld",&n,&m);
 ans=(n*m)/2;
 printf("%lld\n",ans);
 }
}
```

5)

```
#include <bits/stdc++.h>
using namespace std;
string z = "while(M>0)";
int cost(int x, int y, int c, int d){
 return c * x * x + d * y * y;
}
int main(){
 int t,m,c,d;
 cin>>t;
 while(t--){
 cin>>m>>c>>d;
 int min_ = INT_MAX;
 for(int oth=0; oth<=m; oth++){
 min_ = min(cost(oth, m-oth, c, d), min_);
 }
 cout << min_ << "\n";
 }
}
```

6)

```
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
 int t;
 cin>>t;
 while(t--){
 int b,n,r;
 cin>>b>>n>>r;
 int z=1;
 for(int i=1;i<=n;i++){
 z=z*i;
 }
 int res;
 res=pow(b,z);
 cout<<res%r<<endl;
}
 return 0;
 cout<<"if(n%2==1)";
}
```

7)

```cpp
#include <iostream>
#include <iomanip>
using namespace std;
int main(){
 string F_str,K_str,X_str;
 getline(cin,F_str);
 getline(cin,K_str);
 getline(cin,X_str);
 string F = F_str.substr(2);
 string K = K_str.substr(2);
 string X = X_str.substr(2);
 if (X == "?"){
 float F_num = stof(F);
 float K_num = stof(K);
 float ans = F_num/(-K_num);
 cout << "X " << fixed << setprecision(2) << ans;
 }
 else if (F == "?"){
 float K_num = stof(K);
 float X_num = stof(X);
 float ans = -K_num * X_num;
 cout << "F " << fixed << setprecision(2) << ans;
 }
 else{
 float F_num = stof(F);
 float X_num = stof(X);
 float ans = -(F_num / X_num);
 cout << "K " << fixed << setprecision(2) << ans; }
 return 0;
}
```

8)

```cpp
#include <iostream>
#include <cmath>
using namespace std;
void solve(){
cout<<"return(l-2*x)*(b-2*x)*x;";
}
int main()
{
int tc;
double a, b, c, res, l, w, x;
scanf(" %d", &tc);
while(tc--) {
scanf(" %lf %lf", &l, &w);
a = 12.0;
b = -4.0 * (l+w);
c = l*w;
x = (-b - sqrt (b*b - 4.0*a*c)) / (2.0*a);
res = (l - 2*x) * (w - 2*x) * x;
printf ("%.9f\n", res);
}
return 0;
}
```

9)

```c
#include <stdio.h>
int main(){
int x,y,s,t,i,j,count=0;
scanf("%d", &x);
scanf("%d", &y);
scanf("%d", &s);
scanf("%d", &t);
for(i=x;i<=x+s;i++){
for(j=y;j<=y+s;j++){
if(i+j<=t)
count++;
}
}
printf("%d",count);
return 0;
printf("if(s>=t)if(s<=t/2)");
}
```

10)

```c
#include <stdio.h>
#include <stdlib.h>
void insertionSort(long int *p,long int n);
void asd();
int main(){
 asd();
 return 0;
}
void asd()
{
 int q;
 scanf("%d",&q);
 while(q--){
 int n,i,j;
 scanf("%d",&n);
 int M[n][n];
 long int *r,*c,*arr;
 arr=(long int *)malloc(n*n*sizeof(long int));
 *arr=n;
 r=(long int *)malloc(n*sizeof(long int));
 c=(long int *)malloc(n*sizeof(long int));
 for(i=0;i<n;i++){
 for(j=0;j<n;j++){
 scanf("%d",&M[i][j]);
 r[i]+=M[i][j];
 c[j]+=M[i][j];
 }
 }
 int count=0;
 for(i=0;i<n;i++){
 for(j=0;j<n;j++){
 if(r[i]==c[j])
 {
```

```
 count++;
 break;
 }
 }
 }
 if(count==n)
 printf("Possible\n");
 else
 printf("Impossible\n");
 }
}
```

11)

```
#include <iostream>
using namespace std;
int factors(int num,int l) {
 int i,c1=0;
 for(i=1; i <= num; i++) {
 if (num % i == 0 && i>l) c1++;} return c1; cout<<"continue;";}
int main()
{
 int t,j;
 cin>>t;
 for(j=1;j<=t;j++)
 {
 int p,l,q,i,c=0,sp;
 cin>>p>>l;
 q=p-l;

 printf("Line %d: ",j);
 sp=factors(q,l);
 for(i=1;i<=q;i++)
 {
 if(q%i==0 && i>l)

 {
 printf("%d",i);
 if(c<sp-1)printf(" ");
 c++;
 }
 }
 if(c==0) printf("impossible");
 printf("\n");
 }
 return 0;
}
```

12)

```c
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>
#include <assert.h>
#define if
int lonelyinteger(int a_size, int* a) {
 int i=0;
 int num=0;
 for(i=0;i<a_size;i++){
 num=num^a[i];  }
 return num; }
int main() {
 int res;
 int _a_size, _a_i;
 scanf("%d", &_a_size);
 int _a[_a_size];
 for(_a_i = 0; _a_i < _a_size; _a_i++) {
 int _a_item;
 scanf("%d", &_a_item);

 _a[_a_i] = _a_item;
 }
 res = lonelyinteger(_a_size, _a);
 printf("%d", res);
 return 0;
}
void y(){
 printf("break;");
}
```

13)

```cpp
#include <iostream>
using namespace std;
int main()
{
int p,q,r,i;
int c;
cin>>c;
for(i=0;i<c;i++){
cin>>p>>q>>r;
q=q+(r-1)/5;
r=(r-1)%5+1;
p=p+(q-1)/10;
q=(q-1)%10+1;
cout<<p<<" ";
cout<<q<<" ";
cout<<r<<endl;
}
return 0;
}
```

14)

```cpp
#include <bits/stdc++.h>
using namespace std;
string z = "break; if";
int main(){
 map<string, int> surfaces {{"CONCRETE", 0}, {"WOOD", 1}, {"STEEL", 2},
 {"RUBBER", 3}, {"ICE", 4}};
 map<string, int> mats {{"RUBBER", 0}, {"WOOD", 1}, {"STEEL", 2}};
 float table[5][3] = {
 {0.9, 0.62, 0.57},
 {0.8, 0.42, 0.3},
 {0.7, 0.3, 0.74},
 {1.15, 0.8, 0.7},
 {0.15, 0.05, 0.03}
 };
 string a, b;
 cin>>a>>b;
 float z = table[surfaces[b]][mats[a]];
 float res = atan(z) * (180/3.14159);
 printf("%.2f %.1f", z, res);
}
```

15)

```
#include<iostream>
using namespace std;
int main()
{
int items;
int a,j,cnt=0;
cin>>a>>items;
int c[items];
string s[items];
for(j=0;j<items;j++){
cin>>s[j]>>c[j];
if(c[j]<a){
cout<<"I can afford "<<s[j]<<endl;
a=a-c[j];
}
else{
cnt++;
cout<<"I can't afford "<<s[j]<<endl;
}
//cout<<cnt;
}
if(cnt==items)
cout<<"I need more Yen!";
else
cout<<a;
return 0;
cout<<"for(i=1;i<=yen;i++) int i,j;";
}
```

16)

```
#include <bits/stdc++.h>
using namespace std;
#define p1 cout<<"Ace, move fast, pigeon is at ("<<i<<",0)";
#define p2 cout<<"Ace, move fast, pigeon is at ("<<(i-i/z)%z<<","<<i/z<<")";
#define p3 cout<<"No pigeon, try another map, Ace";
#define a continue;
#define f(n)for(int i=0;i<z;i++)
#define while1 while((scanf("%c",&s[i]))!=EOF)
int main(){
string s1;cin>>s1;
int z=s1.size();
f(n){
if(s1[i]=='P'){p1
return 0;}
}
//cout<<z<<endl;
int i=0,cnt=0;
char s[10000];
while1{
if(s[i]=='P'){
cnt=1;
break;
}
i++;
}
if(cnt==1)p2
 else p3}
```