**1. Problem name:** Hashmat the Brave Warrior -10055

**C Solution:**

#include<stdio.h>

int main() {

long long a, b;

while(scanf("%lld %lld", &a, &b) == 2) {

if(a > b) printf("%lld\n", a-b);

else printf("%lld\n", b-a);

}

return 0;

}

**2. Problem name:** Back to High School Physics -10071

**C Solution:**

#include<stdio.h>

int main() {

long long v, t;

while(scanf("%lld %lld", &v, &t) == 2)

printf("%lld\n", 2\*v\*t);

return 0;

}

**3. Problem name:** Pizza Cutting -10079

**C Solution:**

#include<stdio.h>

int main() {

long long int k;

while(scanf("%lld", &k) == 1 && k >= 0) {

printf("%lld\n", k\*(k+1)/2+1);

}

return 0;

}

**4. Problem name:** The Land Of Justice - 10499

**C Solution:**

#include<stdio.h>

using namespace std;

int main(){

long int n,r;

while(scanf("%ld",&n)==1){

if(n<0) break;

if(n==1) r=0;

else r=n\*25;

printf("%ld%%\n",r);

}

return 0;

}

**5. Problem name:** Big Chocolate-10970

**C Solution:**

#include<iostream>

using namespace std;

int main(){

long m,n;

while(cin>>m>>n){

cout<<(m\*n)-1<<endl;

}

return 0;

}

**6. Problem name:** Relational Operator -11172

**C Solution:**

#include<stdio.h>

int main() {

int T, x, y;

scanf("%d", &T);

while(T--) {

scanf("%d %d", &x, &y);

if(x < y) puts("<");

else if(x > y) puts(">");

else puts("=");

}

return 0;

}

**7. Problem name:** Horror Dash-11799

**C Solution:**

#include <stdio.h>

int main() {

int t, n, Case = 0;

scanf("%d", &t);

while(t--) {

scanf("%d", &n);

int max = 0, c;

while(n--) {

scanf("%d", &c);

if(max < c)

max = c;

}

printf("Case %d: %d\n", ++Case, max);

}

return 0;

}

**8. Problem name:** Bafana Bafana -11805  
**C Solution:**#include <stdio.h>  
  
int main() {  
 int t, test = 0, N, K, P;  
 scanf("%d", &t);  
 while(t--) {  
 scanf("%d %d %d", &N, &K, &P);  
 printf("Case %d: %d\n", ++test, (K+P-1)%N+1);  
 }  
 return 0;  
}

**9. Problem name: Peter’s Smoke - 10346**

**C Solution:**

#include <stdio.h>

int main() {

int n, k;

while(scanf("%d %d", &n, &k) == 2) {

int sum = n, used = n;

while(used >= k) {

n = used/k;

used = used%k + n;

sum += n;

}

printf("%d\n", sum);

}

**10. Problem name: F91 -10696**

**C Solution:**

#include<stdio.h>

int main() {

int n;

while(scanf("%d", &n) == 1 && n) {

printf("f91(%d) = %d\n", n, n > 100 ? n-10 : 91);

}

return 0;

}

**11. Problem name:** Odd Sum -10783

**C Solution:**

#include<stdio.h>

int main() {

int T, Case = 0;

scanf("%d", &T);

while(T--) {

int i, sum = 0, a, b;

scanf("%d %d", &a, &b);

if((a&1) == 0) a++;

for(i = a; i <= b; i += 2)

sum += i;

printf("Case %d: %d\n", ++Case, sum);

}

return 0;

}

**12. Problem name:** Beat the Spread -10812

**C Solution:**

#include <stdio.h>

int main() {

int n, s, d, a, b;

scanf("%d", &n);

while(n--) {

scanf("%d %d", &s, &d);

a = (s+d);

b = (s-d);

if(a < 0 || b < 0 || a%2 == 1 || b%2 == 1)

puts("impossible");

else

printf("%d %d\n", a/2, b/2);

}

return 0;

}

**13. Problem name: You can Say 11-10929**

**C Solution:**

#include <stdio.h>

#include <string.h>

int main() {

char s[1001];

while(scanf("%s", s) == 1) {

if(strcmp(s, "0") == 0)

break;

int i, l = strlen(s), sum = 0;

for(i = l-1; i >= 0; i -= 2)

sum += s[i] - '0';

for(i = l-2; i >= 0; i -= 2)

sum -= s[i] - '0';

printf("%s ", s);

if(sum%11 == 0)

puts("is a multiple of 11.");

else

puts("is not a multiple of 11.");

}

return 0;

}

14. **Problem Name** : How old Are You

**C Solution:**

#include <stdio.h>

int main() {

int t, test = 0;

scanf("%d", &t);

while(t--) {

int age, a, b, c, e, f, g;

scanf("%d/%d/%d", &a, &b, &c);

scanf("%d/%d/%d", &e, &f, &g);

age = c-g;

if(f > b) age--;

if(f == b && e > a) age--;

printf("Case #%d: ", ++test);

if(age < 0)

puts("Invalid birth date");

else if(age > 130)

puts("Check birth date");

else

printf("%d\n", age);

}

return 0;

}

15.  **Problem name :** Is this the Easiest Problem

**C Solution:**

#include<stdio.h>

#define swap(x,y) {long long t=x; x=y; y=t;}

int main() {

int T, C = 0;

scanf("%d", &T);

while(T--) {

long long n[3];

scanf("%lld %lld %lld", &n[0], &n[1], &n[2]);

if(n[0] > n[2]) swap(n[0], n[2]);

if(n[1] > n[2]) swap(n[1], n[2]);

if(n[0] > n[1]) swap(n[0], n[1]);

printf("Case %d: ",++C);

if(n[0] + n[1] <= n[2]) puts("Invalid");

else if(n[0] == n[2] && n[1] == n[2]) puts("Equilateral");

else if(n[0] == n[1] || n[1] == n[2]) puts("Isosceles");

else puts("Scalene");

}

return 0;

}

16. **Problem name :** Cost Cutting

**C Solution:**

#include <stdio.h>

int main() {

int t, tmp, a, b, c;

int Case = 0;

scanf("%d", &t);

while(t--) {

scanf("%d %d %d", &a, &b, &c);

if(a > c)

tmp = a, a = c, c = tmp;

if(b > c)

tmp = b, b = c, c = tmp;

if(a > b)

tmp = a, a = b, b = tmp;

printf("Case %d: %d\n", ++Case, b);

}

return 0;

}

17. **Problem name :** A Benevolent Josephus

**C Solution:**

#include <bits/stdc++.h>

using namespace std;

int main() {

const int MAXN = 65536;

int J[MAXN] = {}, D[MAXN] = {};

for (int i = 2; i < MAXN; i++)

J[i] = (J[i-1]+2)%i;

for (int i = 1; i < MAXN; i++) {

J[i] = J[i]+1;

if (J[i] == i)

D[i] = 2\*i;

else

D[i] = i-J[i] + D[J[i]];

}

int n;

while (scanf("%d", &n) == 1) {

int ret = D[n];

printf("%d\n", ret);

}

return 0;

}

18. **Problem name :** Egypt

**C Solution:**

#include<stdio.h>

#define Swap(x, y) {int t; t = x, x = y, y = t;}

int main() {

int x, y, z;

while(scanf("%d %d %d", &x, &y, &z) == 3) {

if(x == 0 && y == 0 && z == 0)

break;

if(x > z) Swap(x, z);

if(y > z) Swap(y, z);

puts(x\*x + y\*y == z\*z ? "right" : "wrong");

}

return 0;

}

19.**Problem name :**  Brick Game

**C Solution:**

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

int t, n, cases = 0;

cin >> t;

while(t--) {

cin >> n;

int a[30];

for(int i = 0; i < n; i++)

cin >> a[i];

sort(a, a+n);

cases++;

cout << "Case " << cases << ": "<< a[n/2] << endl;

}

return 0;

}

20. **Problem name :** Multiple of 17

**C Solution:**

#include <stdio.h>

int main() {

char str[102];

while(gets(str)) {

if(str[0] == '0' && str[1] == '\0')

break;

int tmp = 0, i;

for(i = 0; str[i]; i++) {

tmp = tmp\*10 + str[i]-'0';

tmp %= 17;

}

printf("%d\n", tmp == 0);

}

return 0;

}

21. **Problem name :** A change in thermal unit

**C Solution:**

#include<stdio.h>

int main() {

int T, test = 0, C, d;

scanf("%d", &T);

while(T--) {

scanf("%d %d", &C, &d);

printf("Case %d: %.2lf\n", ++test, (double)C+d\*5/9.0);

}

22. **Problem name :** Packing For Holiday

**C Solution:**

#include<stdio.h>

int main() {

int T, L, W, H, C = 0;

scanf("%d", &T);

while(T--) {

scanf("%d %d %d", &L, &W, &H);

printf("Case %d: ", ++C);

if(L > 20 || W > 20 || H > 20)

puts("bad");

else

puts("good");

}

return 0;

}

23.**Problem name :**  Zapping

**C Solution:**

#include <stdio.h>

#include <stdlib.h>

#define min(x, y) ((x)<(y)?(x):(y))

int main() {

int a, b;

while(scanf("%d %d", &a, &b) == 2) {

if(a < 0) break;

printf("%d\n", min(abs(a-b), min(100-a+b, 100-b+a)));

}

return 0;

}

24.**Problem name :**  Hardest Problem Ever

**C Solution:**

#include <stdio.h>

int main() {

puts("KABIR\n");

return 0;

}

25. **Problem name :** Hazi-e-Akbar

**C Solution:**

#include <iostream>

using namespace std;

int main() {

string s;

int cases = 0;

while(cin >> s) {

if(s == "\*") break;

cout << "Case " << ++cases << ": ";

if(s == "Hajj")

cout << "Hajj-e-Akbar" << endl;

else

cout << "Hajj-e-Asghar" << endl;

}

return 0;

}

26.**Problem name :**  Zero Or One

**C Solution:**

#include<stdio.h>

int main(){

int A, B, C;

while( scanf("%d%d%d", &A, &B, &C) == 3 ){

if( !( A ^ B ) && !( A ^ C ) )

putchar('\*');

else{

if( A ^ B ){

if( B ^ C )

putchar('B');

else

putchar('A');

}

else

putchar('C');

}

putchar('\n');

}

return 0;

}

27.**Problem name :**  Little Master   
**C Solution:**

#include <stdio.h>

#include <math.h>

int main() {

scanf("%\*d");

double x, y, r;

while(scanf("%lf %lf %lf", &x, &y, &r) == 3) {

printf("%.2lf %.2lf\n", r - hypot(x, y), r + hypot(x, y));

}

return 0;

}

28. **Problem name :** GCD the largest

**C Solution:**

#include <stdio.h>

int main() {

scanf("%\*d");

for(long long n; scanf("%lld", &n) == 1;)

printf("%lld\n", n / 2);

return 0;

}

29. **Problem name :** Ugly Number

**C Solution:**

#include<stdio.h>

int main() {

int DP[1500] = {1}, t2 = 0, t3 = 0, t5 = 0, tmp, i;

for(i = 1; i < 1500; i++) {

while(DP[t2]\*2 <= DP[i-1]) t2++;

while(DP[t3]\*3 <= DP[i-1]) t3++;

while(DP[t5]\*5 <= DP[i-1]) t5++;

tmp = DP[t2]\*2;

if(DP[t3]\*3 < tmp) tmp = DP[t3]\*3;

if(DP[t5]\*5 < tmp) tmp = DP[t5]\*5;

DP[i] = tmp;

}

printf("The 1500'th ugly number is %d.\n", DP[1499]);

return 0;

}

30. **Problem name :** Counting weekend days

**C Solution:**

#include <bits/stdc++.h>

using namespace std;

string day\_str[7] = {

"SUN", "MON", "TUE", "WED", "THU", "FRI", "SAT"

};

string mon\_str[12] = {

"JAN", "FEB", "MAR", "APR", "MAY", "JUN", "JUL",

"AUG", "SEP", "OCT", "NOV", "DEC"

};

int days[12] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};

int main() {

int testcase;

scanf("%d", &testcase);

while (testcase--) {

char s1[16], s2[16];

scanf("%s %s", s1, s2);

int a = find(day\_str, day\_str+7, s2) - day\_str;

int b = find(mon\_str, mon\_str+12, s1) - mon\_str;

int ret = 0;

for (int i = 0; i < days[b]; i++) {

if ((a + i)%7 == 5 || (a + i)%7 == 6)

ret++;

}

printf("%d\n", ret);

}

return 0;

}

31. **Problem name :** Train Swapping

**C Solution:**

#include<stdio.h>

int main() {

int N, L, A[50];

scanf("%d", &N);

while(N--) {

scanf("%d", &L);

int i, j, count = 0, tmp;

for(i = 0; i < L; i++)

scanf("%d", &A[i]);

for(i = 0; i < L; i++) {

for(j = L-1; j > i; j--) {

if(A[j] < A[j-1]) {

tmp = A[j];

A[j] = A[j-1];

A[j-1] = tmp;

count++;

}

}

}

printf("Optimal train swapping takes %d swaps.\n", count);

}

return 0;

}

32. **Problem name :** The Collatz Sequence

**C Solution:**

#include <stdio.h>

#include <stdlib.h>

int main() {

long long A, L, TA;

int Case = 0;

while(scanf("%lld %lld", &A, &L) == 2) {

if(A < 0 && L < 0)

break;

int r = 1;

TA = A;

while(A != 1) {

if(A&1)

A = A\*3+1;

else

A = A/2;

if(A > L)

break;

r++;

}

printf("Case %d: A = %lld, limit = %lld, number of terms = %d\n", ++Case, TA, L, r);

}

return 0;

}

33. **Problem name :** Ecological bin Packing

**C Solution:**

#include<stdio.h>

#define swap(x, y) {int t; t = x, x = y, y = t;}

int main() {

char s[4] = "BCG";

int W[6][3] = {{0,1,2},{0,2,1},{1,0,2},{1,2,0},{2,0,1},{2,1,0}};

int B[3][3], i, j, k;

while(scanf("%d", &B[0][0]) == 1) {

for(i = 0; i < 3; i++) {

for(j = 0; j < 3; j++) {

if(i+j == 0) continue;

scanf("%d", &B[i][j]);

}

swap(B[i][1], B[i][2]);

}

unsigned Min = 0xffffffff, idx;

for(i = 0; i < 6; i++) {

int tmp = 0;

for(j = 0; j < 3; j++) {

for(k = 0; k < 3; k++)

if(W[i][j] != k)

tmp += B[j][k];

}

if(tmp < Min) idx = i, Min = tmp;

}

printf("%c%c%c %u\n", s[W[idx][0]], s[W[idx][1]], s[W[idx][2]], Min);

}

return 0;

}