Bài 1:

```cpp
void solve(){
    int n;
    cin >> n;
    int a[n], b[n];
    for(int i = 0; i < n; i++){
        cin >> a[i] >> b[i];
    }
    sort(a,a+n);
    sort(b,b+n);
    int year = a[0];
    int ans = 0;
    int x = 0, y = 0, tmp = 0;
    while(x < n){
        if(a[x] < b[y]){
            tmp++;
            x++;
        }
        else{
            tmp--;
            y++;
        }
        if(tmp > ans){
            ans = tmp;
            year = a[x-1];
        }
    }
    cout << year << " " << ans << endl;
}
```

Bài 3:

```cpp
37 }
38
39 void Hieu(string Num1, string Num2)
40 {
41     bool flag = 0;
42     if (Num1.length() > Num2.length())
43     {
44     }
45     else if (Num1.compare(Num2) > 0 && Nu
46     {
47     }
48     else
49     {
50         flag = 1;
51         string Num = Num1;
52         Num1 = Num2;
53         Num2 = Num;
54     }
55     vector<int> N1, N2, X;
56     for (int i = Num1.length() - 1; i >=
57     {
58         N1.push_back(Num1[i] - '0');
59     }
60     for (int i = Num2.length() - 1; i >=
61     {
62         N2.push_back(Num2[i] - '0');
63     }
64     int space = Num1.length() - Num2.leng
65     for (int i = 0; i < space; i++)
66     {
67         N2.push_back(0);
68     }
69     int len = N1.size();
70     for (int i = 0; i < len; i++)
71     {
72         int temp = N1[i] - N2[i];
73         if (temp < 0)
74         {
75             temp += 10;
76             N1[i + 1] -= 1;
77         }
78         X.push_back(temp);
79     }
80     int i = X.size() - 1;
81     while(X[i] == 0 && i >= 0) i--;
82     if(flag && i >= 0) cout << "-";
83     if(i == -1) cout << "0";
84     for (i; i >= 0; i--)
85     {
86         cout << X[i];
87     }
88     cout << endl;
89 }
```

```cpp
91 void Tong(string Num1, string Num2)
92 {
93     if (Num1.length() >= Num2.length())
94     {
95     }
96     else
97     {
98         string Num = Num1;
99         Num1 = Num2;
100        Num2 = Num;
101    }
102    vector<int> N1, N2, X;
103    for (int i = Num1.length() - 1; i >=
104    {
105        N1.push_back(Num1[i] - '0');
106    }
107    for (int i = Num2.length() - 1; i >=
108    {
109        N2.push_back(Num2[i] - '0');
110    }
111    int space = Num1.length() - Num2.leng
112    for (int i = 0; i < space; i++)
113    {
114        N2.push_back(0);
115    }
116    int len = N1.size();
117    for (int i = 0; i < len; i++)
118    {
119        int temp = N1[i] + N2[i];
120        if (temp > 9 && i != len - 1)
121        {
122            temp -= 10;
123            N1[i + 1] += 1;
124        }
125        X.push_back(temp);
126    }
127    for (int i = X.size() - 1; i >= 0; i-
128    {
129        cout << X[i];
130    }
131    cout << endl;
132 }
```

```cpp
11 void Tich(string Num1, string Num2){
12     int len1 = Num1.length();
13     int len2 = Num2.length();
14     vector<int> N1, N2, X(len1 + len2 - 1
15     for (int i = len1 - 1; i >= 0; i--)
16     {
17         N1.push_back(Num1[i] - '0');
18     }
19     for (int i = len2 - 1; i >= 0; i--)
20     {
21         N2.push_back(Num2[i] - '0');
22     }
23     for(int i = 0; i < len1; i++){
24         for(int j = 0; j < len2; j++){
25             X[i+j] += N1[i]*N2[j];
26         }
27     }
28     for(int i = 0; i < X.size() - 1; i++)
29         X[i+1] += X[i] / 10;
30         X[i] %= 10;
31     }
32     for (int i = X.size() - 1; i >= 0; i-
33     {
34         cout << X[i];
35     }
36     cout << endl;
37 }
```

Bài 2:

```cpp
void solve(){
    int n;
    cin >> n;
    int a[n];
    ll ans = 0;
    for(int i = 0; i < n; i++){
        cin >> a[i];
        ans += a[i];
    }
    sort(a,a+n);
    for(int l = 0, h = n - 1; l < h; l++, h--){
        ans += a[h] - a[l];
    }
    cout << ans << endl;
}
```

Bài 4:

```cpp
ll f[100000];
ll a[100000];

void Hashing(){
    a[0] = 0;
    a[1] = 1;
    f[0] = 0, f[1] = 1;
    for(int i = 2; i <= 100000; i++){
        a[i] += a[i/2] + i%2 * a[i/2+1];
        f[i] = max(f[i-1], a[i]);
    }
}

void solve(){
    int n;
    cin >> n;
    cout << f[n] << endl;
}

int main(){
    fasten();
    Hashing();
    int test;
    cin >> test;
    while(test--){
        solve();
    }
    return 0;
```

Bài 5:

```
long l,r,x,y,z,a[200000],res = 0;

void edit() {
        for (long i=1; i<=r; i++) a[i] = 1;
        for (long i=2; i<=r/2; i++)
                for (long j=2; j<=r/i; j++)
                        a[i*j] += i;
}

int main() {
//  freopen("INP.TXT", "r", stdin);
//  freopen("OUT.TXT", "w", stdout);

        scanf("%li%li",&l,&r);
        edit();
        for (long i=l; i<=r; i++)
                if (a[i] > i) res++;
        printf("%li",res);

        return 0;
}
```

Bài 6:

```
void solve()
{
    string a, b;
    cin >> a >> b;
    string c = a;
    string d = b;
    bool flag = 0;
    while (true)
    {
        if (a.length() == b.length())
        {
            if (!a.compare(b))
            {
                flag = 1;
                break;
            }
            else
                break;
        }
        if (a.length() < b.length())
        {
            a = a + c;
        }
        if (b.length() < a.length())
        {
            b = b + d;
        }
    }
    if (flag)
        cout << a << endl;
    else
        cout << "-1" << endl;
}
```