Indian Coin Change

Problem

You are given an array of denominations and a value X. You need to find the minimum number of coins to make value X.

{Note: We have an infinite supply of each coin.}

Example

Consider the array of denominations

1	2	5	10	20	50	100	200	500	2000

X = 388

So we can disintegrate it as

388 = 200 + 100 + 50 + 20 + 10 + 5 + 2 + 1

Approach

1. Start from the largest value, till we can include it, take it.
2. Else move on the smaller value.

Code

```
#include<bits/stdc++.h>
using namespace std;
#define int long long

signed main() {
    int n; cin >> n;

    vector<int> a(n);
    for(int i=0; i<n; i++) {
        cin >> a[i];
    }

    int val; cin >> val;
```

```
    sort(a.rbegin(), a.rend());
    int ans = 0;
    for(int i=0; i<n; i++) {
        int currCoin = a[i];
        ans += val/currCoin;
        val %= currCoin;

        if(!val)
            break;
    }

    cout << ans << endl;
    return 0;
}
```