

```
1 class Solution {
2 public:
3     int maxArea(vector<int>& height) {
4         int left = 0;
5         int right = height.size() - 1;
6         int maxArea = 0;
7
8         while (left < right) {
9             int currentArea = min(height[left], height[right]) * (right - left);
10            maxArea = max(maxArea, currentArea);
11
12            if (height[left] < height[right]) {
13                left++;
14            } else {
15                right--;
16            }
17        }
18
19        return maxArea;
20    }
21};
```

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[Testcase](#) |  [Test Result](#)

[Case 1](#)   [Case 2](#)   +

height =

[1,8,6,2,5,4,8,3,7]

```

1 //Approach 1 :
2 //time complexity - O(1) since the algorithm always iterates through a constant number of values (13 in this case).
3 //O(1) since the amount of extra space used is constant (the size of the storeIntRoman vector, which is also 13 in this case
4 class Solution {
5 public:
6     string intToRoman(int num) {
7         string Roman = "";
8         // Creating vector of pairs to store the Roman numeral values and their corresponding symbols
9         vector<pair<int, string>> storeIntRoman = {{1000, "M"}, {900, "CM"}, {500, "D"}, {400, "CD"}, {100, "C"}, {90, "XC"}, {50, "L"}, {40, "XL"}, {10, "X"}, {9, "IX"}, {5, "V"}, {4, "IV"}, {1, "I"}};
10        // Iterating through the vector and repeatedly adds the corresponding symbols to the result string while subtracting the corresponding value from the input
11        // integer becomes zero.
12        for (int i = 0; i < storeIntRoman.size(); i++) {
13            while (num >= storeIntRoman[i].first) {
14                Roman += storeIntRoman[i].second;
15                num -= storeIntRoman[i].first;
16            }
17        }
18    }
19 }

```

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Ln 19, C

Testcase [» Test Result](#)

**Accepted** Runtime: 2 ms

Case 1  Case 2  Case 3

Input

```
num =
3749
```

Output

```
"MMMDCCXLIX"
```

```
1 class Solution {
2 public:
3     int romanToInt(string s) {
4         unordered_map<char, int> m;
5
6         m['I'] = 1;
7         m['V'] = 5;
8         m['X'] = 10;
9         m['L'] = 50;
10        m['C'] = 100;
11        m['D'] = 500;
12        m['M'] = 1000;
13
14        int ans = 0;
15
16        for(int i = 0; i < s.length(); i++){
17            if(m[s[i]] < m[s[i+1]]){
18                ans -= m[s[i]];
19            }
20            else{
21                ans += m[s[i]];
22            }
23        }
24        return ans;
25    }
26};
```

```
6     m['I'] = 1;
7     m['V'] = 5;
8     m['X'] = 10;
9     m['L'] = 50;
10    m['C'] = 100;
11    m['D'] = 500;
12    m['M'] = 1000;
13
14    int ans = 0;
15
16    for(int i = 0; i < s.length(); i++){
17        if(m[s[i]] < m[s[i+1]]){
18            ans -= m[s[i]];
19        }
20        else{
21            ans += m[s[i]];
22        }
23    }
24    return ans;
25}
26};
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 4 ms

• Case 1 • Case 2 • Case 3

Input

```
s =
"III"
```

Output

```
3
```

```
1 class Solution {
2 public:
3     string longestCommonPrefix(vector<string>& v) {
4         string ans="";
5         sort(v.begin(),v.end());
6         int n=v.size();
7         string first=v[0],last=v[n-1];
8         for(int i=0;i<min(first.size(),last.size());i++){
9             if(first[i]!=last[i]){
10                 return ans;
11             }
12             ans+=first[i];
13         }
14     }
15 }
16 };
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

• Case 1 • Case 2

Input

```
strs =
["flower","flow","flight"]
```

Output

```
"fl"
```

```
1 //Optimized Approach - O(n^2 logn + nlogn) - o(n^2 logn) time and O(n) space
2 class Solution {
3 public:
4     vector<vector<int>> threeSum(vector<int>& nums) {
5         int target = 0;
6         sort(nums.begin(), nums.end());
7         set<vector<int>> s;
8         vector<vector<int>> output;
9         for (int i = 0; i < nums.size(); i++) {
10             int j = i + 1;
11             int k = nums.size() - 1;
12             while (j < k) {
13                 int sum = nums[i] + nums[j] + nums[k];
14                 if (sum == target) {
15                     s.insert({nums[i], nums[j], nums[k]});
16                     j++;
17                     k--;
18                 } else if (sum < target) {
19                     j++;
20                 } else {
21                     k--;
22                 }
23             }
24         }
25         for(auto triplets : s)
26             output.push_back(triplets);
27     }
28     return output;
29 }
```

```
6     sort(nums.begin(), nums.end());
7     set<vector<int>> s;
8     vector<vector<int>> output;
9     for (int i = 0; i < nums.size(); i++){
10         int j = i + 1;
11         int k = nums.size() - 1;
12         while (j < k) {
13             int sum = nums[i] + nums[j] + nums[k];
14             if (sum == target) {
15                 s.insert({nums[i], nums[j], nums[k]});
16                 j++;
17                 k--;
18             } else if (sum < target) {
19                 j++;
20             } else {
21                 k--;
22             }
23         }
24     }
25     for(auto triplets : s)
26         output.push_back(triplets);
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

[Case 1](#) [Case 2](#) [Case 3](#)

Input

```
nums =
[-1,0,1,2,-1,-4]
```

Output

```
[[ -1, -1, 2], [ -1, 0, 1]]
```

```

1  class Solution {
2  public:
3      int threeSumClosest(vector<int>& nums, int target) {
4          int len = nums.size();
5          if(len == 3) return nums[0] + nums[1] + nums[2];
6
7          sort(nums.begin(), nums.end());
8
9          int ans = nums[0] + nums[1] + nums[2];
10         if(ans >= target) return ans;
11
12         int max = nums[len - 1] + nums[len - 2] + nums[len - 3];
13         if(max <= target) return max;
14
15         int last = nums[0];
16         int left, right, sum, num;
17         int dist = abs(ans - target);
18         int i = 0;
19
20         for(; i < len - 2; i++){
21             if (i && nums[i] == last)
22                 continue;
23             last = num = nums[i];
24             left = i + 1;
25             right = len - 1;
26             while(left < right){
27                 sum = num + nums[left] + nums[right];
28                 if (sum == target) return sum;
29                 if(abs(sum - target) < dist){
30                     ans = sum;
31                     dist = abs(ans - target);
32                 }
33                 if(sum < target){
34                     while(left < right && nums[left] == nums[left + 1])
35                         left++;
36                     left++;
37                 }
38                 else{

```

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```
14
15     int last = nums[0];
16     int left, right, sum, num;
17     int dist = abs(ans - target);
18     int i = 0;
19
20     for(; i < len - 2; i++){
21         if (i && nums[i] == last)
22             continue;
23         last = num = nums[i];
24         left = i + 1;
25         right = len - 1;
26         while(left < right){
27             sum = num + nums[left] + nums[right];
28             if (sum == target) return sum;
29             if(abs(sum - target) < dist){
30                 ans = sum;
31                 dist = abs(ans - target);
32             }
33             if(sum < target){
34                 while(left < right && nums[left] == nums[left + 1])
35                     left++;
36                     left++;
37             }
38             else{
39                 while(left < right && nums[right] == nums[right - 1])
40                     right--;
41                     right--;
42             }
43         }
44     }
45     return ans;
46 }
47 };
```

```
14
15     int last = nums[0];
16     int left, right, sum, num;
17     int dist = abs(ans - target);
18     int i = 0;
19
20     for(; i < len - 2; i++){
21         if (i && nums[i] == last)
22             continue;
23         last = num = nums[i];
24         left = i + 1;
25         right = len - 1;
26         while(left < right){
27             sum = num + nums[left] + nums[right];
28             if (sum == target) return sum;
```

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Accepted Runtime: 0 ms

[Case 1](#) [Case 2](#)

Input

```
nums =
[-1,2,1,-4]
```

```
target =
1
```

Output

```
2
```

```
1 class Solution {
2 public:
3     string map[10] = {"", "", "abc", "def", "ghi", "jkl", "mno", "pqrs", "tuv", "wxyz"};
4     void helper(string digits, vector<string>& ans, int index, string current) {
5         if(index == digits.length()) {
6             ans.push_back(current);
7             return;
8         }
9         string s = map[digits[index]-'0'];
10        for(int i = 0; i < s.length(); i++) {
11            helper(digits, ans, index+1, current+s[i]);
12        }
13    }
14    vector<string> letterCombinations(string digits) {
15        vector<string> ans;
16
17        if(digits.length() == 0) return ans;
18
19        helper(digits, ans, 0, "");
20        return ans;
21    }
22};
```

```
14     vector<string> letterCombinations(string digits) {
15         vector<string> ans;
16
17         if(digits.length() == 0) return ans;
18
19         helper(digits, ans, 0, "");
20
21     }
22 }
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 3 ms

Case 1  Case 2  Case 3

Input

```
digits =
"23"
```

Output

```
["ad", "ae", "af", "bd", "be", "bf", "cd", "ce", "cf"]
```

```

1  class Solution {
2  public:
3      vector<vector<int>> fourSum(vector<int>& nums, int target) {
4          if(nums.size() < 4)
5              return {};
6
7          vector<vector<int>> ans;
8          sort(nums.begin(), nums.end());
9
10         for(int i = 0; i < nums.size() - 3; increment(nums, i)){
11             for(int j = i + 1; j < nums.size() - 2; increment(nums, j)){
12                 int l = j + 1, r = nums.size() - 1;
13                 long sum = 0;
14
15                 // two pointer
16                 while(l < r){
17                     sum = (long)nums[i] + nums[j] + nums[l] + nums[r];
18
19                     // if a solution is found, add it and change both pointers
20                     if(sum == target){
21                         ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22                         increment(nums, l);
23                         decrement(nums, r);
24                     }
25                     // if sum is lesser, move left pointer to right by 1
26                     else if(sum < target)
27                         increment(nums, l);
28                     // else if sum is greater, move right pointer to left by 1
29                     else
30                         decrement(nums, r);
31                 }
32             }
33         }
34
35         return ans;
36     }
37
38     // increment() & decrement() are helper functions to avoid duplicates

```

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```
19     // if a solution is found, add it and change both pointers
20     if(sum == target){
21         ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22         increment(nums, l);
23         decrement(nums, r);
24     }
25     // if sum is lesser, move left pointer to right by 1
26     else if(sum < target)
27         increment(nums, l);
28     // else if sum is greater, move right pointer to left by 1
29     else
30         decrement(nums, r);
31     }
32 }
33
34     return ans;
35 }
36
37 // increment() & decrement() are helper functions to avoid duplicates
38 // basically, they do i++ or i-- but until a different number is found
39
40 void increment(vector<int>& nums, int& n){
41     do
42     |   n++;
43     |   while(n < nums.size() && nums[n] == nums[n - 1]);
44 }
45
46 void decrement(vector<int>& nums, int& n){
47     do
48     |   n--;
49     |   while(n >= 0 && nums[n] == nums[n + 1]);
50 }
51
52 };
```

```
19 // if a solution is found, add it and change both pointers
20 if(sum == target){
21     ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22     increment(nums, 1);
23     decrement(nums, r);
24 }
```

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Testcase | [Test Result](#)

• Case 1 • Case 2

Input

```
nums =
[1,0,-1,0,-2,2]
```

```
target =
0
```

Output

```
[[[-2,-1,1,2],[-2,0,0,2],[-1,0,0,1]]]
```

```
1 class Solution {
2 public:
3     ListNode* removeNthFromEnd(ListNode* head, int n) {
4         // if list.size == 1 and position want to delete is 1 => NULL
5         if(n == 1 && head->next==NULL) return NULL;
6
7         // find size of list
8         int count = 0;
9         ListNode* temp = head;
10        while(temp != NULL)
11        {
12            count++;
13            temp = temp -> next;
14        }
15
16        // calculate position of node need to delete from head
17        int nFromHead = count - n;
18
19        // find the prev node of node want to delete
20        temp = head;
21        for(int i = 1 ; i < nFromHead ; i++)
22        {
23            temp = temp->next;
24        }
25
26        // nFromHead == 0 mean the first node need to delete
27        // => head == head -> next
28
29        // nFromHead != 0 => temp is prev node of node need to delete
30        // => temp->next->next is the next node of node need to delete
31        // => temp->next = temp->next->next
32        (nFromHead != 0) ? temp->next = temp->next->next : head=head->next;
33        return head;
34    }
35};
```

```
1 class Solution {
2 public:
3     int maxArea(vector<int>& height) {
4         int left = 0;
5         int right = height.size() - 1;
6         int maxArea = 0;
7
8         while (left < right) {
9             int currentArea = min(height[left], height[right]) * (right - left);
10            maxArea = max(maxArea, currentArea);
11
12            if (height[left] < height[right]) {
13                left++;
14            } else {
15                right--;
16            }
17        }
18
19        return maxArea;
20    }
21};
```

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[Testcase](#) |  [Test Result](#)

[Case 1](#)   [Case 2](#)   +

height =

[1,8,6,2,5,4,8,3,7]

```

1 //Approach 1 :
2 //time complexity - O(1) since the algorithm always iterates through a constant number of values (13 in this case).
3 //O(1) since the amount of extra space used is constant (the size of the storeIntRoman vector, which is also 13 in this case
4 class Solution {
5 public:
6     string intToRoman(int num) {
7         string Roman = "";
8         // Creating vector of pairs to store the Roman numeral values and their corresponding symbols
9         vector<pair<int, string>> storeIntRoman = {{1000, "M"}, {900, "CM"}, {500, "D"}, {400, "CD"}, {100, "C"}, {90, "XC"}, {50, "L"}, {40, "XL"}, {10, "X"}, {9, "IX"}, {5, "V"}, {4, "IV"}, {1, "I"}};
10        // Iterating through the vector and repeatedly adds the corresponding symbols to the result string while subtracting the corresponding value from the input
11        // integer becomes zero.
12        for (int i = 0; i < storeIntRoman.size(); i++) {
13            while (num >= storeIntRoman[i].first) {
14                Roman += storeIntRoman[i].second;
15                num -= storeIntRoman[i].first;
16            }
17        }
18    }
19 }

```

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Testcase [» Test Result](#)

**Accepted** Runtime: 2 ms

Case 1  Case 2  Case 3

Input

```
num =
3749
```

Output

```
"MMMDCCXLIX"
```

```
1 class Solution {
2 public:
3     int romanToInt(string s) {
4         unordered_map<char, int> m;
5
6         m['I'] = 1;
7         m['V'] = 5;
8         m['X'] = 10;
9         m['L'] = 50;
10        m['C'] = 100;
11        m['D'] = 500;
12        m['M'] = 1000;
13
14        int ans = 0;
15
16        for(int i = 0; i < s.length(); i++){
17            if(m[s[i]] < m[s[i+1]]){
18                ans -= m[s[i]];
19            }
20            else{
21                ans += m[s[i]];
22            }
23        }
24        return ans;
25    }
26};
```

```
6     m['I'] = 1;
7     m['V'] = 5;
8     m['X'] = 10;
9     m['L'] = 50;
10    m['C'] = 100;
11    m['D'] = 500;
12    m['M'] = 1000;
13
14    int ans = 0;
15
16    for(int i = 0; i < s.length(); i++){
17        if(m[s[i]] < m[s[i+1]]){
18            ans -= m[s[i]];
19        }
20        else{
21            ans += m[s[i]];
22        }
23    }
24    return ans;
25}
26};
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 4 ms

• Case 1 • Case 2 • Case 3

Input

```
s =
"III"
```

Output

```
3
```

```
1 class Solution {
2 public:
3     string longestCommonPrefix(vector<string>& v) {
4         string ans="";
5         sort(v.begin(),v.end());
6         int n=v.size();
7         string first=v[0],last=v[n-1];
8         for(int i=0;i<min(first.size(),last.size());i++){
9             if(first[i]!=last[i]){
10                 return ans;
11             }
12             ans+=first[i];
13         }
14     }
15 }
16 };
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

• Case 1 • Case 2

Input

```
strs =
["flower","flow","flight"]
```

Output

```
"fl"
```

```
1 //Optimized Approach - O(n^2 logn + nlogn) - o(n^2 logn) time and O(n) space
2 class Solution {
3 public:
4     vector<vector<int>> threeSum(vector<int>& nums) {
5         int target = 0;
6         sort(nums.begin(), nums.end());
7         set<vector<int>> s;
8         vector<vector<int>> output;
9         for (int i = 0; i < nums.size(); i++) {
10             int j = i + 1;
11             int k = nums.size() - 1;
12             while (j < k) {
13                 int sum = nums[i] + nums[j] + nums[k];
14                 if (sum == target) {
15                     s.insert({nums[i], nums[j], nums[k]});
16                     j++;
17                     k--;
18                 } else if (sum < target) {
19                     j++;
20                 } else {
21                     k--;
22                 }
23             }
24         }
25         for(auto triplets : s)
26             output.push_back(triplets);
27     }
28     return output;
29 }
```

```
6     sort(nums.begin(), nums.end());
7     set<vector<int>> s;
8     vector<vector<int>> output;
9     for (int i = 0; i < nums.size(); i++){
10         int j = i + 1;
11         int k = nums.size() - 1;
12         while (j < k) {
13             int sum = nums[i] + nums[j] + nums[k];
14             if (sum == target) {
15                 s.insert({nums[i], nums[j], nums[k]});
16                 j++;
17                 k--;
18             } else if (sum < target) {
19                 j++;
20             } else {
21                 k--;
22             }
23         }
24     }
25     for(auto triplets : s)
26         output.push_back(triplets);
```

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Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

[Case 1](#) [Case 2](#) [Case 3](#)

Input

```
nums =
[-1,0,1,2,-1,-4]
```

Output

```
[[ -1, -1, 2], [ -1, 0, 1]]
```

```
1 class Solution {
2 public:
3     int threeSumClosest(vector<int>& nums, int target) {
4         int len = nums.size();
5         if(len == 3) return nums[0] + nums[1] + nums[2];
6
7         sort(nums.begin(), nums.end());
8
9         int ans = nums[0] + nums[1] + nums[2];
10        if(ans >= target) return ans;
11
12        int max = nums[len - 1] + nums[len - 2] + nums[len - 3];
13        if(max <= target) return max;
14
15        int last = nums[0];
16        int left, right, sum, num;
17        int dist = abs(ans - target);
18        int i = 0;
19
20        for(; i < len - 2; i++){
21            if (i && nums[i] == last)
22                continue;
23            last = num = nums[i];
24            left = i + 1;
25            right = len - 1;
26            while(left < right){
27                sum = num + nums[left] + nums[right];
28                if (sum == target) return sum;
29                if(abs(sum - target) < dist){
30                    ans = sum;
31                    dist = abs(ans - target);
32                }
33                if(sum < target){
34                    while(left < right && nums[left] == nums[left + 1])
35                        left++;
36                    left++;
37                }
38                else{
```

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```
14
15     int last = nums[0];
16     int left, right, sum, num;
17     int dist = abs(ans - target);
18     int i = 0;
19
20     for(; i < len - 2; i++){
21         if (i && nums[i] == last)
22             continue;
23         last = num = nums[i];
24         left = i + 1;
25         right = len - 1;
26         while(left < right){
27             sum = num + nums[left] + nums[right];
28             if (sum == target) return sum;
29             if(abs(sum - target) < dist){
30                 ans = sum;
31                 dist = abs(ans - target);
32             }
33             if(sum < target){
34                 while(left < right && nums[left] == nums[left + 1])
35                     left++;
36                     left++;
37             }
38             else{
39                 while(left < right && nums[right] == nums[right - 1])
40                     right--;
41                     right--;
42             }
43         }
44     }
45     return ans;
46 }
47 };
```

```
14
15     int last = nums[0];
16     int left, right, sum, num;
17     int dist = abs(ans - target);
18     int i = 0;
19
20     for(; i < len - 2; i++){
21         if (i && nums[i] == last)
22             continue;
23         last = num = nums[i];
24         left = i + 1;
25         right = len - 1;
26         while(left < right){
27             sum = num + nums[left] + nums[right];
28             if (sum == target) return sum;
```

Saved

Testcase | [Test Result](#)

Accepted Runtime: 0 ms

[Case 1](#) [Case 2](#)

Input

```
nums =
[-1,2,1,-4]
```

```
target =
1
```

Output

```
2
```

```
1 class Solution {
2 public:
3     string map[10] = {"", "", "abc", "def", "ghi", "jkl", "mno", "pqrs", "tuv", "wxyz"};
4     void helper(string digits, vector<string>& ans, int index, string current) {
5         if(index == digits.length()) {
6             ans.push_back(current);
7             return;
8         }
9         string s = map[digits[index]-'0'];
10        for(int i = 0; i < s.length(); i++) {
11            helper(digits, ans, index+1, current+s[i]);
12        }
13    }
14    vector<string> letterCombinations(string digits) {
15        vector<string> ans;
16
17        if(digits.length() == 0) return ans;
18
19        helper(digits, ans, 0, "");
20        return ans;
21    }
22};
```

```
14     vector<string> letterCombinations(string digits) {
15         vector<string> ans;
16
17         if(digits.length() == 0) return ans;
18
19         helper(digits, ans, 0, "");
20
21     }
22 }
```

Saved

Testcase | [Test Result](#)

**Accepted** Runtime: 3 ms

Case 1  Case 2  Case 3

Input

```
digits =
"23"
```

Output

```
["ad", "ae", "af", "bd", "be", "bf", "cd", "ce", "cf"]
```

```

1  class Solution {
2  public:
3      vector<vector<int>> fourSum(vector<int>& nums, int target) {
4          if(nums.size() < 4)
5              return {};
6
7          vector<vector<int>> ans;
8          sort(nums.begin(), nums.end());
9
10         for(int i = 0; i < nums.size() - 3; increment(nums, i)){
11             for(int j = i + 1; j < nums.size() - 2; increment(nums, j)){
12                 int l = j + 1, r = nums.size() - 1;
13                 long sum = 0;
14
15                 // two pointer
16                 while(l < r){
17                     sum = (long)nums[i] + nums[j] + nums[l] + nums[r];
18
19                     // if a solution is found, add it and change both pointers
20                     if(sum == target){
21                         ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22                         increment(nums, l);
23                         decrement(nums, r);
24                     }
25                     // if sum is lesser, move left pointer to right by 1
26                     else if(sum < target)
27                         increment(nums, l);
28                     // else if sum is greater, move right pointer to left by 1
29                     else
30                         decrement(nums, r);
31                 }
32             }
33         }
34
35         return ans;
36     }
37
38     // increment() & decrement() are helper functions to avoid duplicates

```

Saved

```
19     // if a solution is found, add it and change both pointers
20     if(sum == target){
21         ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22         increment(nums, l);
23         decrement(nums, r);
24     }
25     // if sum is lesser, move left pointer to right by 1
26     else if(sum < target)
27         increment(nums, l);
28     // else if sum is greater, move right pointer to left by 1
29     else
30         decrement(nums, r);
31     }
32 }
33
34     return ans;
35 }
36
37 // increment() & decrement() are helper functions to avoid duplicates
38 // basically, they do i++ or i-- but until a different number is found
39
40 void increment(vector<int>& nums, int& n){
41     do
42     |   n++;
43     |   while(n < nums.size() && nums[n] == nums[n - 1]);
44 }
45
46 void decrement(vector<int>& nums, int& n){
47     do
48     |   n--;
49     |   while(n >= 0 && nums[n] == nums[n + 1]);
50 }
51
52 };
```

```
19 // if a solution is found, add it and change both pointers
20 if(sum == target){
21     ans.push_back({nums[i], nums[j], nums[l], nums[r]});
22     increment(nums, 1);
23     decrement(nums, r);
24 }
```

Saved

Testcase | [Test Result](#)

• Case 1 • Case 2

Input

```
nums =
[1,0,-1,0,-2,2]
```

```
target =
0
```

Output

```
[[[-2,-1,1,2],[-2,0,0,2],[-1,0,0,1]]]
```

```
1 class Solution {
2 public:
3     ListNode* removeNthFromEnd(ListNode* head, int n) {
4         // if list.size == 1 and position want to delete is 1 => NULL
5         if(n == 1 && head->next==NULL) return NULL;
6
7         // find size of list
8         int count = 0;
9         ListNode* temp = head;
10        while(temp != NULL)
11        {
12            count++;
13            temp = temp -> next;
14        }
15
16        // calculate position of node need to delete from head
17        int nFromHead = count - n;
18
19        // find the prev node of node want to delete
20        temp = head;
21        for(int i = 1 ; i < nFromHead ; i++)
22        {
23            temp = temp->next;
24        }
25
26        // nFromHead == 0 mean the first node need to delete
27        // => head == head -> next
28
29        // nFromHead != 0 => temp is prev node of node need to delete
30        // => temp->next->next is the next node of node need to delete
31        // => temp->next = temp->next->next
32        (nFromHead != 0) ? temp->next = temp->next->next : head=head->next;
33        return head;
34    }
35};
```

```
1 class Solution {
2 public:
3     ListNode* removeNthFromEnd(ListNode* head, int n) {
4         // if list.size == 1 and position want to delete is 1 => NULL
5         if(n == 1 && head->next==NULL) return NULL;
6
7         // find size of list
8         int count = 0;
9         ListNode* temp = head;
10        . . .
```

Saved

Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

[• Case 1](#) [• Case 2](#) [• Case 3](#)

Input

```
head =
[1,2,3,4,5]
```

```
n =
2
```

Output

```
[1,2,3,5]
```

```
1 class Solution {
2 public:
3     bool isValid(string s) {
4         stack<char> st; // create an empty stack to store opening brackets
5         for (char c : s) { // loop through each character in the string
6             if (c == '(' || c == '{' || c == '[') { // if the character is an opening bracket
7                 st.push(c); // push it onto the stack
8             } else { // if the character is a closing bracket
9                 if (st.empty() || // if the stack is empty or
10                     (c == ')' && st.top() != '(') || // the closing bracket doesn't match the corresponding opening bracket at the top of the stack
11                     (c == '}' && st.top() != '{') ||
12                     (c == ']' && st.top() != '[')) {
13                     return false; // the string is not valid, so return false
14                 }
15                 st.pop(); // otherwise, pop the opening bracket from the stack
16             }
17         }
18         return st.empty(); // if the stack is empty, all opening brackets have been matched with their corresponding closing brackets,
19         // so the string is valid, otherwise, there are unmatched opening brackets, so return false
20     }
21 };
```

```
18     if (stack.isEmpty()) // if the stack is empty, all opening brackets have been matched with their corresponding closing brackets,
19     } // so the string is valid, otherwise, there are unmatched opening brackets, so return false
20   }
21 }
```

Saved

Testcase | [Test Result](#)

**Accepted** Runtime: 0 ms

[Case 1](#) [Case 2](#) [Case 3](#)

Input

```
s =
"()"
```

Output

```
true
```