Q. 1

```
#include <iostream>
using namespace std;

int main()
{
   int a = 5, b = 10, temp;

   cout << "Before swapping." << endl;
   cout << "a = " << a << ", b = " << b << endl;

   temp = a;
   a = b;
   b = temp;

   cout << "\nAfter swapping." << endl;
   cout << "a = " << a << ", b = " << b << endl;

   return 0;
}
```

Output:

```
Before swapping.
a = 5, b = 10

After swapping.
a = 10, b = 5
```

Q. 2

```
#include <iostream>
using namespace std;

int main() {
   float n1, n2, n3;

   cout << "Enter three numbers: ";
   cin >> n1 >> n2 >> n3;

   if(n1 >= n2 && n1 >= n3)
      cout << "Largest number: " << n1;
```

```
    if(n2 >= n1 && n2 >= n3)
        cout << "Largest number: " << n2;

    if(n3 >= n1 && n3 >= n2)
        cout << "Largest number: " << n3;

    return 0;
}
```

Output:

```
Enter three numbers: 2.3
8.3
-4.2
Largest number: 8.3
```

Q. 3

```
#include <iostream>
using namespace std;

int main() {
    int i, n;
    bool isPrime = true;

    cout << "Enter a positive integer: ";
    cin >> n;

    // 0 and 1 are not prime numbers
    if (n == 0 || n == 1) {
        isPrime = false;
    }
    else {
        for (i = 2; i <= n / 2; ++i) {
            if (n % i == 0) {
                isPrime = false;
                break;
            }
        }
    }
    if (isPrime)
        cout << n << " is a prime number";
    else
        cout << n << " is not a prime number";
```

```
    return 0;
}
```
Output:

```
Enter a positive integer: 29
29 is a prime number.
```

Q. 4

```
#include <iostream>
using namespace std;

int main() {
    int year;

    cout << "Enter a year: ";
    cin >> year;

    if (year % 4 == 0) {
        if (year % 100 == 0) {
            if (year % 400 == 0)
                cout << year << " is a leap year.";
            else
                cout << year << " is not a leap year.";
        }
        else
            cout << year << " is a leap year.";
    }
    else
        cout << year << " is not a leap year.";

    return 0;
}
```
Output:

```
Enter a year: 2014
2014 is not a leap year.
```

Q. 5

```
#include <iostream>
```

```
using namespace std;

int main() {
   int n, t1 = 0, t2 = 1, nextTerm = 0;

   cout << "Enter the number of terms: ";
   cin >> n;

   cout << "Fibonacci Series: ";

   for (int i = 1; i <= n; ++i) {
      // Prints the first two terms.
      if(i == 1) {
         cout << t1 << ", ";
         continue;
      }
      if(i == 2) {
         cout << t2 << ", ";
         continue;
      }
      nextTerm = t1 + t2;
      t1 = t2;
      t2 = nextTerm;

      cout << nextTerm << ", ";
   }
   return 0;
}
```

Output:

```
Enter the number of terms: 10
Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34,
```

Q. 6

```
#include <iostream>
using namespace std;
int main(){
  int n, num[50], largest, second;
  cout<<"Enter number of elements: ";
  cin>>n;
  for(int i=0; i<n; i++){
    cout<<"Enter Array Element"<<(i+1)<<": ";
```

```
    cin>>num[i];
  }
  /* Here we are comparing first two elements of the
   * array, and storing the largest one in the variable
   * "largest" and the other one to "second" variable.
   */
  if(num[0]<num[1]){
    largest = num[1];
    second = num[0];
  }
  else{
    largest = num[0];
    second = num[1];
  }
  for (int i = 2; i< n ; i ++) {
    /* If the current array element is greater than largest
     * then the largest is copied to "second" and the element
     * is copied to the "largest" variable.
     */
    if (num[i] > largest) {
      second = largest;
      largest = num[i];
    }
    /* If current array element is less than largest but greater
     * then second largest ("second" variable) then copy the
     * element to "second"
     */
    else if (num[i] > second && num[i] != largest) {
      second = num[i];
    }
  }
  cout<<"Second Largest Element in array is: "<<second;
  return 0;
}
```

Output:

```
Enter number of elements: 5
Enter Array Element1: 12
Enter Array Element2: 31
Enter Array Element3: 9
Enter Array Element4: 21
```

Enter Array Element5: 3
Second Largest Element in array is: 21

Q. 7

```
#include <iostream>
using namespace std;

int main()
{
   int space, rows;

   cout <<"Enter number of rows: ";
   cin >> rows;

   for(int i = 1, k = 0; i <= rows; ++i, k = 0)
   {
      for(space = 1; space <= rows-i; ++space)
      {
         cout <<"  ";
      }

      while(k != 2*i-1)
      {
         cout << "* ";
         ++k;
      }
      cout << endl;
   }
   return 0;
}
```

Q. 8

```
// C++ program to rotate an array by
// d elements
#include <bits/stdc++.h>
using namespace std;

/*Function to left Rotate arr[] of
size n by 1*/
void leftRotatebyOne(int arr[], int n)
```

```
{
	int temp = arr[0], i;
	for (i = 0; i < n - 1; i++)
		arr[i] = arr[i + 1];

	arr[n-1] = temp;
}

/*Function to left rotate arr[] of size n by d*/
void leftRotate(int arr[], int d, int n)
{
	for (int i = 0; i < d; i++)
		leftRotatebyOne(arr, n);
}

/* utility function to print an array */
void printArray(int arr[], int n)
{
	for (int i = 0; i < n; i++)
		cout << arr[i] << " ";
}

/* Driver program to test above functions */
int main()
{
	int arr[] = { 1, 2, 3, 4, 5, 6, 7 };
	int n = sizeof(arr) / sizeof(arr[0]);

	// Function calling
	leftRotate(arr, 2, n);
	printArray(arr, n);

	return 0;
}
```

Output:
3 4 5 6 7 1 2

Q. 9

```
#include <map>
#include <set>
```

```
#include <list>
#include <cmath>
#include <ctime>
#include <deque>
#include <queue>
#include <stack>
#include <string>
#include <bitset>
#include <cstdio>
#include <limits>
#include <vector>
#include <climits>
#include <cstring>
#include <cstdlib>
#include <fstream>
#include <numeric>
#include <sstream>
#include <iostream>
#include <algorithm>
#include <unordered_map>

using namespace std;


int main(){
    int n;
    cin >> n;
    for(int a0 = 0; a0 < n; a0++){
        int grade;
        cin >> grade;

        if (grade < 38) {
            cout << grade << "\n";
            continue;
        }

        int rem = grade % 5;
        if (5 - rem < 3)
            grade += 5 - rem;
        cout << grade << "\n";
    }
    return 0;
}
```

Q. 10

```
// CPP program to convert given sentence
/// to camel case.
#include <bits/stdc++.h>
using namespace std;

// Function to remove spaces and convert
// into camel case
string convert(string s)
{
	int n = s.length();

	int res_ind = 0;

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

		// check for spaces in the sentence
		if (s[i] == ' ') {

			// conversion into upper case
			s[i + 1] = toupper(s[i + 1]);
			continue;
		}

		// If not space, copy character
		else
			s[res_ind++] = s[i];
	}

	// return string to main
	return s.substr(0, res_ind);
}

// Driver program
int main()
{
	string str = "My name is Akanksha Jena";
	cout << convert(str);
	return 0;
}
```

Output:

MyNameIsAkankshaJena