```cpp
/*

Que 1: Write a C++ program to check whether a number is Armstrong number or Not.
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9

*/

//                      *********  Solution  *********

#include <iostream>// Including Necessary Header Files

int main()
{

	int num, result = 0, temp, count = 0; // Necessary variables
	std::cout << "Enter a Number: ";
	std::cin >> num; // Taking input from user.

	temp = num;
	while (temp > 0) // While loop to count the length of number.
	{
		count++;
		temp = temp / 10;
	}

	temp = num;
	// Logic to check number is armstrong number.
	while (temp > 0)
	{
		int rem = temp % 10;
		int cube = 1;
		for (int i = 0; i < count; i++)
		{
			cube = cube * rem;
		}
		result = result + cube;
		temp = temp / 10;
	}

	if (result == num)
	{
		std::cout << "The given number " << num << " is an Armstrong Number." <<
std::endl;
	}
	else
	{
		std::cout << "The given number " << num << " is NOT an Armstrong
Number." << std::endl;
	}

	return 0;
}




/*

Que 2: Write a c++ program to find out second highest element in given array.
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9
```

```
*/

//                      *********  Solution  *********

#include <iostream> // Including Necessary Header Files

int main()
{
	int num, arr[50];

	// Input number of array elements.
	std::cout << "Enter how many elements do you want in array: ";
	std::cin >> num;

	// Input array elements.
	std::cout << "Enter Array Elements:- " << std::endl;
	for (int i = 0; i < num; i++)
	{
		std::cin >> arr[i];
	}

	// Printing given array elements.
	std::cout << "Given array is : ";
	for (int i = 0; i < num; i++)
	{
		std::cout << arr[i] << " ";
	}
	std::cout << std::endl;

	// Finding highest element from array.
	int high = arr[0];
	for (int i = 1; i < num; i++)
	{
		if (arr[i] > high)
		{
			high = arr[i];
		}
	}

	// Finding second highest element from array.
	int secHigh = arr[0];
	for (int i = 1; i < num; i++)
	{
		if (arr[i] == high)
		{
			continue;
		}
		else if (arr[i] > secHigh)
		{
			secHigh = arr[i];
		}
	}

	std::cout << "The second highest element in given array is: " << secHigh <<
std::endl;

	return 0;
}
```

```cpp
/*

Que 3: Write a c++ program to check whether given string is palindrome or not.
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9

*/

//                      *********  Solution  *********

#include <iostream> // Including Necessary Header Files

int main()
{
	char arr[50], rev[50];
	int count = 0;

	// Taking input string using fgets function.
	std::cout << "Enter a string: ";
	fgets(arr, sizeof(arr), stdin);

	// Printing given string.
	std::cout << "Given String is: " << arr << std::endl;

	// Count length of string.
	while (arr[count] != '\n')
	{
		count++;
	}
	count--;

	// Logic to reverse the given string.
	int i = 0;
	while (count >= 0)
	{
		rev[i] = arr[count];
		i++, count--;
	}
	rev[i] = '\0';

	// Printing reversed string.
	std::cout << "Reversed String is: " << rev << std::endl;

	// Check for given string are palindrome or not.
	int flag = 0;
	i = 0;
	while (arr[i] != '\n')
	{
		if (arr[i] != rev[i])
		{
			flag = 1;
			break;
		}
		i++;
	}

	// Print Output
	if (flag == 0)
	{
		std::cout << "The given string is Palindrome." << std::endl;
	}
	else
```

```
	{
		std::cout << "The given string is NOT Palindrome." << std::endl;
	}

	return 0;
}




/*

Que 4: Write a c++ program to illustrate global constant and local constant.
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9

*/

//                      *********  Solution  *********

#include <iostream> // Including Necessary Header Files

//const int a = 10; // Gives error for (*prt)++; as a is an global variable which is
in RoData(Read only).

int main()
{
	const int a = 10; // Constant integer local variable

	int* ptr = const_cast<int*> (&a); // Integer pointer typecasted to store
address using const_cast.

	std::cout << "The value of a is: " << a << std::endl;

	(*ptr)++; // Value changed using pointer.

	std::cout << "The value of a is: " << *ptr << std::endl;

	return 0;
}




/*

Que 5: Write a c++ program to print a given pattern:
		1
		2 3
		4 5 6
		7 8 9 10
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9

*/

//                      *********  Solution  *********

#include <iostream> // Including Necessary Header Files
```

```cpp
int main()
{
	int num;
	std::cout << "Enter a number: ";
	std::cin >> num; // Input Number of rows you want to print in pattern.

	// Logic to print pattern.
	for (int i = 1; i <= num; i++)
	{
		int j = i;
		static int num = i;
		while (j--)
		{
			std::cout << num << " ";
			num++;
		}
		std::cout << std::endl;
	}

	return 0;
}
```

```cpp
/*

Que 5: Write a c++ program to remove duplicate elements from given array.
Owner: Rushikesh Sanjay Pokharkar
Batch: PPA9

*/

//                      *********  Solution  *********

#include <iostream> // Including Necessary Header Files


int main()
{
	int num, arr[50];

	std::cout << "Enter how many elements do you want in given array: ";
	std::cin >> num;

	std::cout << "Enter array elements:- " << std::endl;

	for (int i = 0; i < num; i++)
	{
		std::cin >> arr[i];
	}

	std::cout << "User Entered Array is: ";
	for (int i = 0; i < num; i++)
	{
		std::cout << arr[i] << " ";
	}

	return 0;
}
```