# Practice Problems Set 1

**Note**: Solve all the problems given in lecture slides.

## Question 1.

What is the output of the following code:

```
int delta = 0, x =3;
if ( x % 2 == 1)
        delta = delta + x;
x = x + 1;
if ( x % 2 == 0)
        delta = delta + x;
x = x + 1;
if( x % 2 == 0)
        delta = delta + x;
cout << delta;
```

## Question 2.

What is the output of the following code:

```
int num = 56;
if ( num % 7 )
{
        cout << "Number is divisible by 7 \n";
}
else
{
        cout << "Number is not divisible by 7 \n";
}
```

## Question 3.

The following program segment has been written to print a simple message in case the input number is a positive integer and contains exactly 5-digits (not less than 5 or more than 5-digits). What condition should be written within the parenthesis so that the program segment works correctly? Please remember that you are not allowed to use any other variables or add any new instruction in the program segment. Just write the condition using the already declared variable(s).

```
int num = 0;
cin >>  num;
```

```
if (_____)
        cout << " It is a five digit positive number";
else
        cout << " It is not a five digit positive number ";
```

## Question 4:

Write a C++ program that plays the game of “Rock, paper, scissors.” In this game, two players simultaneously say (or display a hand symbol representing) either “rock,”, “paper”, or “scissors.” The winner is the one whose choice dominates the other. The rules are paper dominates (wraps) rock, rock dominates (breaks) scissors, and scissors dominate (cut) paper. User will input the values as follows:

Rock=1, Paper=2, Scissors= 3;

**Input**: 1, 1 rock, rock
**Output**: Draw
**Input**: 1, 2 rock, paper
**Output**: Second player wins

## Question 5.

Using the fact that October 4, 2020 is a Sunday; write a program in C++ that can print the day name on any given date between 1/1/1900 and 31/12/2500.

## Question 6.

Create a C++ program to compute the number of leap years between two given years.