Sheet #4: Control Statements

1- What is the output of the following code, if num=5:

```
Integer :: num
Read(*,*) num
if (num > 5) then
write (*,*)  num
num = 0
else
write (*,*) "Num is zero"
end if
end
```

2- Suppose that x, y, and z are integer variables, and x = 10, y = 15, and z = 20. Determine whether the following expressions evaluate to true or false.

a. (x > 10)
b. x <= 5 .or. y < 15
c. (x /= 5) .and. (y /= z)
d. x >= z .or. (x + y >= z)
e. (x <= y - 2) .and. (y >= z) .or. (z - 2 /= 20)

3- Write a program that prompts the user to input a number. The program should then output the number and a message saying whether the number is positive, negative, or zero.

4- Write a program that prompts the user to input three numbers. The program should then output the numbers in ascending order.

5- Write a program that design a simple calculator using switch statement.

6- Write a program that reads the lengths of 3 sides of a triangle from the user. Display a message indicating the type of the triangle.

7- Write a program that computes the real roots of a quadratic function. Your program should begin by prompting the user for the values of a, b and c. Then it should display a message indicating the number of real roots, along with the values of the real roots (if any).

8- Write a program that inputs a four-digit integer at maximum, separates the integer into its digits and prints them separated by three spaces each. For example, if the user types in 2339, the program should print: 2 3 3 9.