

## Exercise # 6 (07-11-2001)

### Exercise 1:

Given these values for Boolean variables x, y, and z:

x = TRUE, y = FALSE, z = TRUE

Evaluate the following logical expressions. In the blank next to each expression, write a T if the result is TRUE or an F if the result is FALSE.

- \_\_\_ a. x && y || x && z
- \_\_\_ b. (x || !y) && (!x || y)
- \_\_\_ c. x || y && z
- \_\_\_ d. !(x || y) && z

### Exercise 2:

Match each logical expression in the left column with the logical expression in the right column that tests for the same condition.

- |                         |                                 |
|-------------------------|---------------------------------|
| ___ a. x < y && y < z   | (1) !(x != y) && y == z         |
| ___ b. x > y && y >= z  | (2) !(x <= y    y < z)          |
| ___ c. x != y    y == z | (3) (y < z    y == z)    x == y |
| ___ d. x == y    y <= z | (4) !(x >= y) && !(y >= z)      |
| ___ e. x == y && y == z | (5) !(x == y && y != z)         |

### Exercise 3:

Given the int variables x, y, and z, where x is 3, y is 7, and z is 6, what is the output from each of the following code fragments?

- a. 

```
if (x <= 3)
    cout << x + y << endl;
    cout << x + y << endl;
```
- b. 

```
if (x != -1)
    cout << "The value of x is " << x << endl;
else
    cout << "The value of y is " << y << endl;
```
- c. 

```
if (x != -1)
{
    cout << x << endl;
    cout << y << endl;
    cout << z << endl;
}
else
    cout << "y" << endl;
    cout << "z" << endl;
```

**Exercise 4:**

Simplify the following program segment , taking out unnecessary comparisons. Assume that age is an int variable.

```
if (age > 64)
    cout << "Senior voter";
if (age < 18)
    cout << "Under age";
if (age >= 18 && age < 65)
    cout << "Regular voter";
```

**Exercise 5:**

Rewrite the following code fragment using a switch statement.

```
if (n == 3)
    alpha++;
else if (n == 7)
    beta++;
else if (n == 10)
    gamma++;
```

**Exercise 6:**

What is printed by the following code fragment if n equals 3?

```
switch (n + 1)
{
    case 2 : cout << "Bill";
    case 4 : cout << "Mary";
    case 7 : cout << "Joe";
    case 9 : cout << "Anne";
    default : cout << "Whoops!";
}
```