**Problem Solving and Programming**

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**Assignment #3 Exercises 1,4,7,8,9,10**

1. **Write a fragment of code that will test whether an integer variable score contains a valid test score. Valid test scores are in the range 0 to 100.**

if(score >= 0 && score <= 100)

{

System.out.println(“Valid test score”);

}

else

{

System.out.println(“Invalid test score”);

}

1. **Consider the following fragment of code:**

if (x > 5)

System.out.println(“A”);

else if(x < 5)

System.out.println(“B”);

else

System.out.println(“C”);

What is displayed if x is

* 1. If x is 4 the output is B
  2. If x is 5 the output is B
  3. If x is 6 the output is A
  4. If x is 9 the output is A
  5. If x is 10 the output is A
  6. If x is 11 the output is A

1. **What is the value of each of the following boolean expressions if x is 5,y is 10, and z is 15?**
2. (x < 5 && y > x) = False
3. (x < 5 || y > x) = True
4. (x > 3 || y 10 && z == 15) = True
5. (! (x > 3) && x!= z || x + y == z) = True
6. **The following code fragment will not compile. Why?**

if !x > x + y

x = 2 \* x;

else

x = x + 3;

This code won’t compile because the ! (NOT) operator cannot apply to other data types except boolean data types, and the condition that is written with in the braces of the if statement.

1. **Consider the boolean expression ((x > 10) || (x < 100)). Why is this expression probably not what the programmer intended?**

This condition declares that the result will always be true in all cases. This means false in never returned from the condition. The boolean expression will always return true for all the values of x.

1. **Consider the boolean expression ((2 < 5) && (x < 100)). Why is this expression probably not what the programmer intended?**

This condition declares that results will always be true in all cases. This means false is never returned from the condition. The boolean expression will always return all values of x (below 100). The expression 2 < 5 is always true and doesn’t need to be calculated. You can simply code if(x < 100) to make the calculations that are needed.