

COMP 248 - Tutorial #3

Boolean expressions & selection instructions

Question 1: What output will be produced by the following code?

```
public class SelectionStatements
{
    public static void main(String[] args)
    {
        int number = 24;
        if(number % 2 == 0)
            System.out.print("The condition evaluated to true!");
        else
            System.out.print("The condition evaluated to false!");
    }
}
```

Question 2: What would be the output of the code in #1 if number was originally initialized to 25?

Question 3: Write a multi-way if-else statement that evaluates a persons weight on the following criteria: A weight less than 116 pounds, output: Eat 5 banana splits! A weight between 116 pounds and 130 pounds, output: Eat a banana split! A weight between 131 pounds and 200 pounds, output: Perfect! A weight greater than 200 pounds, output: Plenty of banana splits have been consumed!

Question 4: Write an if-else statement to compute the amount of shipping due on an online sale. If the cost of the purchase is less than or equal to \$20, the shipping cost is \$5.99. If the cost of the purchase over \$20 and at most \$65, the shipping cost is \$10.99. If the cost of the purchase is over \$65, the shipping cost is \$15.99.

Question 5: What is the value of these expressions?

```
1+2 > 4-2 && 12 < 23
1+2 > 4-2 || 12 < 23
1+2 > 4-2 && 12 > 23
1+2 > 4-2 || 12 > 23
```

Question 6: What is the output of these code fragments?

```
int sum = 14;
if ( sum < 20 )
    System.out.print("Under ");
else
    System.out.print("Over ");
System.out.println("the limit.");
```

```
int sum = 14;
if ( sum < 20 )
    System.out.print("Under ");
else
{
    System.out.print("Over ");
    System.out.println("the limit.");
}
```

```
int sum = 94;
if ( sum < 20 )

    System.out.print("Under ");
    System.out.println("the limit.");
}
else
{
    System.out.print("Over ");
    System.out.println("the limit.");
}
```

Question 7: Assume the following declarations:

```
int x = 1;
boolean isFree = false;
char initial = 'L';
char code = 'Y';
String english = "hi";
```

```
String italian = "ciao";
boolean q = (5 == 6);
```

For each of the following expressions, indicate if it creates a syntax error or not. If there is no error, indicate the value of the expression.

```
(true && (5>6))
```

```
((x!=0) || (x%2 == 1))
```

```
(isFree | (x<0))
```

```
initial == code
```

```
!!q
```

```
(0 <= x <= 10)
```

```
(english > italian)
```

```
(isFree) ? 4 : 10
```

```
initial = code
```

```
"italian".equals(italian)
```

Question 8: What is the output of the following?

```
int x = -555;
boolean isNegative = (x < 0);
if (isNegative)
{
    x = 100;
    if (isNegative)
        System.out.println("no");
    else
        System.out.println("yes");
}
else
    System.out.println("maybe");
```