Java Review Set Semester 1

Data types, variables, methods, and if-else

1. Provide the value returned and data type of this value, for each of the following questions.
   a) 2 / 6 returns ____ of data type _____
   b) (byte)7%2 returns ____ of data type _____
   c) 1.5 * 3 + 17 / (4 – 9*2) returns ____ of data type _____
   d) (double)(1/5) returns ____ of data type _____
   e) Math.pow (4 , 2) returns ____ of data type _____
   f) (int)(Math.random()*5 + 2) returns numbers between ___ and ___ (inclusive) of data type _____
   g) (short)('&') returns _____ of data type _____

2. Complete the following program, by filling in the blanks. Comments have been provided to help you.

```
private double cost;
cost is initialized to 0.0 in the constructor.

public static void main (String [] args)
{
      Program prog = new Program();
      prog.run();
}
public void run()
{
      int number = 0;
      _____  //call the method called requestInput() with appropriate return types / parameters
      _____  //call the method called processInput() with appropriate return types / parameters
      System.out.println("Thank you for your patronage!");
}
public int requestInput()
{
      Scanner kb = new Scanner(System.in);
      System.out.println("Please indicate amount of boxes you would like to order.);
      num = kb.nextInt();
      return num;
}
public static void processInput(int numIn)
{
    if (_____)  //if input is less than 1, print an error message – that input is not appropriate
          _____;
    else
    {
          if(_____)  //if input is less than 10, calculate cost as being $5 per box times number of boxes
                cost = _____;
          _____    //else if input is more than or = 10, calculate cost as being $3.50 per box times number of boxes
                cost = _____;
          _____;  //print cost to terminal window
    }
}
```

3. Indicate if the following return true or false. Show work, if any.

   _____ (char)(16*10 + 15%10) = = 'b'

   _____ 67/10-5*2 + 0.4 == - 3.6

   _____ false && false

   _____ (double) (3/2) > 0

   _____ true || false

   _____ 6* 1+0.5 != 6*1.5

4. Fill in the space to the right of each program portion to trace each loop including the output. If nothing is printed, indicate why.

```
for(int i = 2; i > –2; i--)
{
      double k = i*0.5;
      System.out.println("k is " + k + " and i is " + i);
}
```

```
for(int i = 0; i < 5; i += 2)
{
      int s = i*i;
      System.out.println("s is " + s + " and i is " + i);
}
int a = 1;
int b = 2;
while(a + b > 0)
{
      System.out.println("a is" + a +" and b is "+ b);
      a--;
}
```

```
int a = 1;
int b = –2;
while( a + b > 0 )
{
      System.out.println("a is" + a +" and b is "+ b);
}
a--;
```

```
int m = 0;
do
{
      System.out.println("m is " + m);
      m++;
}while(m>5);
```

5. Rewrite the loop below as a for-loop and a do…while loop.

```
int g = 100;
double w = 0.1;
while(w < 1.0)
{
      w += 0.1;
      g = (int)(g – g*w);
      System.out.println("w is " + w);
}
```

for:

do-while:

Multiple Choice Practice

1. (int)(Math.random()*5 + 8) returns
   a) 5 to 8 b) 5 to 13 c) 8 to 13 d) 5 and 8 e) none of these

2. 100/3 + 51%10 returns
   a) 2 b) 34 c) 34.3 d) 8 e) none of these

3. How do the three loop types differ?
   a) For is the most concise
   b) Do…while runs only once
   c) For uses three conditions rather than one
   d) a and b
   e) none of these

4. false && true returns
   a. true b. false

5. true || (false && false) returns
   a. true b. false

6. Which is a valid identifier in Java (obeying convention)
   a) float
   b) set-flow
   c) 2cool
   d) Baby#
   e) None of these

7. Which assigns "set" to the String x?
   a) String x = "set"
   b) String x = new String ("set")
   c) String [] x = new String {"set"}
   d) "set" = x String
   e) a and b

8.

```
class MyPoint
{
        void myMethod()
        {
                int x, y;
                x = 5; y = 3;
                System.out.print( " ( " + x + ", " + y + " ) " );
                switchCoords( x, y );
                System.out.print( " ( " + x + ", " + y + " ) " );
        }
        void switchCoords( int x, int y )
        {
                int temp;
                temp = x;
                x = y;
                y = temp;
                System.out.print( " ( " + x + ", " + y + " ) " );
        }
}
```

myMethod() is executed. What is the output?
   a) (5,3) (5,3) (5,3)
   b) (5,3) (3,5) (3,5)
   c) (5,3) (3,5) (5,3)
   d) (3,5) (5,3) (3,5)
   e) none of these

9. What is invalid for use as a condition for the following blank: if (_____)?
   a) x = 2
   b) "cat".equals("rat")
   c) arr[3] = = 1
   d) true
   e) none of these or more than one of these

10. 5.6*23/5 - 8+2.1/4 > 15 returns
    a) true b) false

11. The code in #10 on the left side of the equation returns
    a) double b) int c) boolean d) none of these

12. + is
   a) used to combine numbers mathematically
   b) used to concatenate
   c) used to increment when paired with another symbol of its type
   d) a and b
   e) a, b, and c