Computer Science II – Prepa Tec Campus Eugenio Garza Lagüera
Activity 1: Review

"En esta actividad me comprometo a aplicar mis conocimientos, esforzarme en su desarrollo y no servirme de medios no autorizados o ilícitos para realizarla. Es de mi conocimiento, que debo entregar a través de la plataforma Canvas los procesos realizados ya que ningún resultado tiene valor sin proceso."

Name: _____ Student Id: _____ Signature: _____

Turn in the answers to the following exercises by hand.

Problem 1

```
1  public class P1{
2
3      public static void main(String[] args){
4          int a = 0, b=0, c=3;
5
6          System.out.println(5%2*4);
7
8          while (a>=b){
9              for(b=1; b<5;++b){
10                 ++c;
11                 System.out.println(a + " " + b + " " + c);
12             }
13             System.out.println(b+b+c);
14         }
15     }
16
17 }
18
```

Complete a code trace of the code above.

a	b	c	Output

a) What is the difference in output between lines 11 and 13?

b) How many times is the **`for`** loop executed? Why?

c) How many times is the **`while`** loop executed? Why?

d) What does line 10 do?

e) What is the control variable for each loop in the program?

Problem #2

```
1  public class P2{
2
3      public static void main(String[] args){
4          int x=5, y=0, z=3, b=0;
5
6          y = (int)(1.5*10)%2 + z*9;
7          if (y>7){
8              for (b = 1; b<3; ++b){
9                  System.out.println(y+" "+b);
10             }
11         }
12         else {
13             System.out.println(y+b+" ");
14         }
15     }
16
17 }
```

Complete a code trace of the code above.

b	x	y	z	Output

a) Are there any errors in the code above?

b) What is the final value of variable y?

c) What is the difference between the output generated by lines 9 and 13?

d) How many times is the **`for`** loop executed?

e) Where is the **casting** being done in the code above? What is the purpose of it?

Problem #3

```
10      public static void main(String[] args)  throws IOException
11      {
12          int x=5, y=0, z=3, b=0;
13
14          y= ((int)( 4.5 % 5 *10) + x * 5);
15          switch (y){
16              case 10: case 20: case 30: case 60:
17                  {
18                      stdOut.println("fecha limite");
19                      break;
20                  }
21              case 25: case 35: case 70: case 90:
22                      stdOut.println( y + 12);
23
24              case 12: case 18: case 15: case 45:
25                      stdOut.println ( y * 2);
26              default:
27                      stdOut.println ( y + 20 % 4);
28              }
29              stdOut.println( "quedo" + y);
30      }
```

```
C:\Program Files\Xinox Software\JCreat
82
140
70
quedo70
Press any key to continue...
```

a) What does line 16 do?

b) Which braces { } can be considered optional in the code above? Why?

c) Are there any errors in the code above? Are they logic, syntax or runtime errors?

d) What do you have to keep in mind when using a **switch** statement?

e) List two advantages of using a **switch** offer an **if** in the code above.

Problem 4:
Imagine you have a car dealership that sells two types of cars: a basic model and an equipped model. Customers can buy these cars either by paying in cash or by financing them.

If someone pays in cash, they receive a 10% discount on the basic car and a 15% discount on the equipped one. However, if they choose to finance the car, the price increases by 25%, spread out over 48 monthly installments.

Create a Java class that calculates the total payment a customer needs to make based on their chosen car type and payment method. If they opt for financing, the program should also show the monthly payment.