Unit 2 – Worksheet 04 – For Loops Name: ___________________________________

How many times will each of the following for-loops run?

1. `for(int i=1 ; i<9 ; i++)`
2. `for(int h=1 ; h<=12 ; h++)`
3. `for(int j=7 ; j>2 ; j--)`
4. `for(int k=12 ; k<=17 ; k+=2)`
5. `for(int m=3 ; m<186 ; m++)`
6. `for(int n=128 ; n>4 ; n/=2)`
7. `for(int s=1 ; s<1 ; s++)`
8.
   ```
   for(int p=1 ; p<10 ; p++)  {
       if(p==4)
           break;
   }
   ```
9.
   ```
   for(int r=3 ; r<11 ; r+=2)  {
       if(r<=7)
           r++;
       else if(r==7)
           break;
       else
           r--;
   }
   ```

What will the exact output be for the following for-loops?

10.
    ```
    for(int k=2 ; k<10 ; k++)  {
        if (k<6)
            System.out.print(k%2);
        else if (k==6)
            System.out.print(k/2);
        else
            break;
    }
    ```
11.
    ```
    for(int i=12 ; i>2 ; i/=2)  {
        i=i+2;
        System.out.print(i+”  “);
    }
    ```
12.
    ```
    for(int m=1 ; m<=14 ; m*=2)  {
        int p=2;
        System.out.print(m*p);
    }
    ```

13. Create a new class called ***numberGuess***. The computer should select a random number 1-100 and ask the user to guess the number. The class should tell the user if their guess is too low or too high and ask them to guess again. The user should continue guessing until they guess the number. Utilize a for-loop that tracks how many guesses the user makes. The final output should congratulate the user and tell them how many guesses it took.

14. Complete the ***modifiedPassword*** Project on the following page …

modifiedPassword Project

Consider the following code … something that we have already accomplished in this course:

```
Scanner scanTron = new Scanner(System.in);          //Scanner setup
String password="Yam";                              //password is initialized and “permanent”

System.out.println("Enter your password ");
String userguess=scanTron.nextLine();               //get user-entered password (input)

if(userguess.equals(password))                              //test the password!
    System.out.println("Password entered successfully");
else
    System.out.println("Incorrect Password");
```

In this project, you will be modifying and improving the above code to make a much more sophisticated program. Your new program, called ***modifiedPassword***, should do the following:

1. Ask the user to create a new password (no spaces allowed in the password).

2. Store the user-created password as a string variable.

3. Communicate to the user that the password was created successfully.

4. Ask the user to log in using their password.

5. Using a for-loop, track how many times the user has tried to enter their password.

6. If the user enters the correct password, the following should occur …

    a. Congratulate the user for logging in successfully in __ attempt(s).
    b. Welcome the user to the program (be creative)
    c. Display a menu including at least 5 numbered items.
    d. One item must supply the user the option to change their password (and do it).
    e. One item must supply the user the option to exit the program (and make the program end).
    f. The other items in the menu should do something useful for the user (be creative).

7. If the user enters an incorrect password, the following should occur …

    a. Track how many times the user attempts to enter their password.
    b. If the wrong password is entered 3 times, the user is told their account is now locked and that they will need to contact their administrator to correct the problem (the program then ends).