

Name: Zachary Lo

Name of person to my left:

Name of person to my right:

CIS 36A Midterm Practice

This quiz is closed book, closed note, closed technology. You are required to clear all items off your desk, including phones and pencil cases. Please place all items in your bag and on the floor. You must do your own work on this quiz without aid from any person or anything. If you are found to violate any of these rules you will automatically receive a 0 on this quiz and will be reported to the administration. You have 10 minutes to complete this quiz.

1. What will the following lines of code print to the console?

Output: Argyle

```
int numSocks = 10;
boolean matching = true;
if (!matching && numSocks <= 10) {
    System.out.println("Stripes");
}

if (!matching || numSocks <=10) {
    System.out.println("Argyle");
}

if (matching || numSocks < 10) {
    System.out.println("Sport");
}
```

2. Write a print statement to print the value of the below variable to exactly 2 decimal places:

```
double price = 3.99999999;
//write your print statement below
System.out.print("%.2f", price);
```

3. Declare a final variable named PI and assign it the value of 3.14:

```
//write your statement below
final double PI = 3.14;
```

4. Which of the following is equivalent to the below statement. Select ALL that apply:

```
x = x - 1;
```

- a. x -= 1;
- b. x -= 1;
- c. x--;
- d. --x;
- e. x - 1;
- f. x - 1 = x;

5. Write the following for loop as the equivalent while loop (output should be identical when both loops are run):

For Loop:

```
for (int count = 0; count < 5; count++)  
{  
    System.out.println("hi: " + count);  
}
```

While Loop:

```
int count = 0;  
  
while (count < 5)  
{  
    System.out.println("hi: " + count);  
    count++;  
}
```

6. What will be the output to the console after running the below for loop?

```
for (int i = 0; i <= 5; i++)  
{  
    if (i % 2 == 0 || i % 3 == 0) {  
        System.out.print("$");  
    } else {  
        System.out.print("!");  
    }  
}
```

Output: \$!\$\$\$!

7. What is the name/term for the problem that occurs when you run the below loop.

Name/term for this problem: **Infinite loop**

```
Scanner input = new Scanner(System.in);
String repeat = "y"
while (repeat.equalsIgnoreCase("y"))
{
    System.out.println("Playing an exciting game!\n");
    repeat = input.next();
    System.out.print("Want to play again? (y/n): ");
}
```

Now, correct the problem ON THE CODE ABOVE by adding some code to it. Please do not rewrite the whole loop.

8. Which of the following loops will correctly print out each character in the String *line*:

- a. `for (int i = 1; i <= line.length(); i++) {
 System.out.println(line.charAt(i));
}`
- b. `for (int i = 0; i <= line.length(); i++) {
 System.out.println(line.charAt(i));
}`
- c. `for (int i = 1; i < line.length(); i++) {
 System.out.println(line.charAt(i));
}`
- d. `for (int i = 0; i < line.length(); i++) {
 System.out.println(line.charAt(i));
}`
- e. `for (int i = 0; i < line.length()-1; i++) {
 System.out.println(line.charAt(i));
}`

9. What is the advantage of using a do-while loop instead of a while loop?

The do-while loop guarantees that:

The test condition occurs at the end of the loop. The test condition at the end guarantees that the body of the loop always executes at least one time.

(Use do while loop is when you want to execute the statements inside the loop at least once, even though condition expression returns false. Otherwise it's always better to use a while loop.)

Main difference between a while loop and do while loop is that while loop checks the condition before iteration of the loop, while do-while loop checks the condition after the execution of the statements inside the loop.)

10. Convert the following while loop into a do-while loop:

```
System.out.print("Enter a positive number: ");
int num = input.nextInt();

while (num < 0) {
    System.out.print("Enter a positive number: ");
    num = input.nextInt();
}
```

Write your loop below:

```
int num;
do
{
    System.out.print("Enter a positive number: ");
    num = input.nextInt();
}
while(num < 0)
{
}
```

11. Add two lines of code below to prevent `typeMismatchException`, i.e. handle the situation where a user enters a `String` instead of the requested numerical input.

```
System.out.print("Please enter precise degrees Celsius: ");
while (
    )
{
    System.out.println("Please enter numbers not text.");

    System.out.print("Please enter degrees Celsius: ");
    degrees = input.nextDouble();
}
double degrees = input.nextDouble();
```

12. There is a problem in the below code. Please add one line to fix it.

```
Scanner input = new Scanner(System.in);

System.out.print("Enter your age: ");

int age = input.nextInt();

System.out.print("Enter your full name: ");

String name = input.nextLine();

input.close();
```

Below Question Will Not Be On Midterm:

13. Write a method called `calcTip`. The method takes in one double parameter for the price. It returns a double for the tip, calculated to be 15% of the price.