

COP 3330 Quiz #1 1/30/2026

Please print your name in CAPITAL letters.

Last Name: _____, **First Name:** _____

1) (10 pts) Jamila is making fruit baskets which have both apples and oranges. Each basket will have the same number of apples and the same number of oranges. Complete the main method below that it reads in the number of apples and oranges needed for each basket as well as the total number of apples and oranges that she has, and outputs the total number of complete fruit baskets she can form. (For full credit please use a method from the Math library and no if statement. If you don't you'll lose 1 point.) You may assume that each value entered by the user will be a positive integer.

```
public static void main(String[] args) {

    int res = 0;
    Scanner stdin = new Scanner(System.in);
    System.out.println("How many apples per basket?");

    _____;

    System.out.println("How many oranges per basket?");

    _____;

    System.out.println("How many apples do you have total?");

    _____;

    System.out.println("How many oranges do you have total?");

    _____;

    System.out.println("You can make a total of "+res+" complete baskets");
}
```

2) (5 pts) Write a segment of code that creates one Random object and prints out 100,000 randomly generated integers, each in between -1,000,000 and 1,000,000, inclusive.

3) (6 pts) Of each item listed below, clearly circle each one that is a primitive type in Java:

number long char String boolean int[]

4) (4 pts) From memory, list at least one method from the Math library **that isn't listed on the reference sheet at the end of this exam.** List the name of the method and its formal parameter list and give a brief description of what it does.

5) (10 pts) Here is an inverted pyramid of size 5:

```
5 5 5 5 5
 4 4 4 4
  3 3 3
   2 2
    1
```

Complete the main method below, using a nested loop structure, so that it prints out an inverted pyramid of size n, where n is guaranteed to be a positive integer in between 1 and 9, inclusive. All of your print statements can print out at most two characters.

```
public static void main(String[] args) {
    Scanner stdin = new Scanner(System.in);
    System.out.println("How many rows for your inverted pyramid?");
```

```
    int n = _____ ;
```

```
}
```

6) (9 pts) Jessica does different workouts each day, repeating the same pattern every 10 days. If we label the days 0, 1, 2, ..., 9, then days 0, 3, 6 and 9, are "leg day"s, days 4 and 8 are "arm day"s and the rest of the days in the cycle are "cardio". Complete the program below **using a SINGLE comparison in two of the branches** so that the program prints out what work out will occur on each day starting from day 0 ending at day $n - 1$, where n is entered by the user. (Note: day 10 will be a leg day, day 11 a cardio day, day 12 cardio, day 13 leg, day 14 arm day, etc.)

```
public static void main(String[] args) {

    Scanner stdin = new Scanner(System.in);
    System.out.println("How many days of working out?");
    int n = stdin.nextInt();

    for (int i=0; i<n; i++) {

        System.out.print("Day "+i+": ");

        if ( _____ )

            System.out.println("_____");

        else if ( _____ )

            System.out.println(" _____");

        else

            System.out.println("_____");

    }

}
```

7) (5 pts) All four women's semifinalists in the Australian Open have both their first and last names end in the letter a (Aryna Sabalenka, Elina Svitolina, Jessica Pegula and Elena Rybakina). Complete the segment of code below, assuming that the first name of a player is stored in the String variable first and the last name of the same player is stored in the String variable last, that prints out "A+" if both names end in a either 'a' or 'A', and prints out "not a semifinalist" otherwise. **Please use the appropriate String methods and do not check for 'a' and 'A' separately.**

```
Scanner stdin = new Scanner(System.in);
System.out.println("Please enter your first and last name.");
String first = stdin.next();
String last = stdin.next();
```

8) (1 pt) Artemis II is likely going to launch later this year, with four astronauts. What was its unmanned predecessor, which was launched on November 16, 2022?

Java Language Reference

Math Class

Modifier and Type	Method	Description
static double	abs(double a)	Returns the absolute value of a double value.
static double	max(double a, double b)	Returns the greater of two double values.
static double	min(double a, double b)	Returns the smaller of two double values.
static double	pow(double a, double b)	Returns the value of the first argument raised to the power of the second argument.

Random Class

Modifier and Type	Method	Description
double	nextDouble()	Returns the next pseudorandom, uniformly distributed double value between 0.0 and 1.0 from this random number generator's sequence.
int	nextInt(int bound)	Returns a pseudorandom, uniformly distributed int value between 0 (inclusive) and the specified value (exclusive), drawn from this random number generator's sequence.

String Class

Modifier and Type	Method	Description
char	charAt()	Returns the char value at the specified index.
int	length()	Returns the length of this string.
String	toLowerCase()	Converts all of the characters in this String to lower case using the rules of the default locale.
String	toUpperCase()	Converts all of the characters in this String to upper case using the rules of the default locale.