

Name \_\_\_\_\_ Period \_\_\_\_\_

1. The Dice class below prompts the user for two integers between 4 (inclusive) and 12 (inclusive). The numbers provided correspond to the number of sides on a given die. The dice simulates the rolling of the dice by generating a random number for each die in the range of 1 through the number provided. The random numbers generated are then printed to the console. Along with whether the values on the die are the same.

Input for die 1	Input for die 2	Output
5	10	You rolled a 3 and a 10. false
4	6	You rolled a 4 and a 1. false
8	12	You rolled a 6 and a 6. true

Below is a summary of what the Dice class does,

- Declares a Scanner object
- Prompts the user for two integers
- Creates two random numbers based on the integers provided in the range of 1 (inclusive) up to the integer provided (inclusive)
- Prints the random numbers to the console, along with whether the values on the die are the same.

Write the Dice class below. You need not indicate the imports required of the Scanner object.

```
public class Dice{

    public static void main(Strings args[]){

        Scanner input = new Scanner(System.in);
        System.out.println("Type a number");
        int num1 = input.nextInt();
        System.out.println("Type another number");
        int num2 = input.nextInt();

        int roll1 = (int)(Math.random()*num1 + 1);
        int roll2 = (int)(Math.random()*num2 + 1);
        boolean result = (roll1 == roll2);

        System.out.println("You rolled a " + roll1 + " and a " + roll2 + ". " +
result);

    }

}
```

/5

2. The GuessNum class below evaluates whether guesses a digit in a 3 digit number correctly. Consider the following examples,

Number	Guess	Output
123	2	True
345	6	False
301	1	True
900	9	True

Below is a summary of what the GuessNum class does,

- Creates a random integer from 100 to 999 (inclusive) and stores it in number
- Declares a Scanner object
- Prompts the user for an integer guess
- Evaluates whether the guessed integer is in the number and prints the result

Write the GuessNum class below. You may not use if statements in your solution.

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

        Scanner input = new Scanner(System.in);
        System.out.println("Guess a digit");
        int guess = input.nextInt();
        int num = (int)(Math.random()*900 + 100);

        int ones = num%10;
        int tens = (num/10)%10;
        int hundreds = (num/100)%10;

        boolean result = ones == guess || tens == guess || hundreds == guess ?
true:false;
        System.out.println(result);

    }
}
```

/4

3. Consider the input for two numbers, *num1* and *num2*. If *num1* is greater than *num2*, you must swap the values you stored in the numbers. You must use the JAVA ternary operator to compare the numbers, no if statements are allowed. Below are example inputs and results.

num1	num2	result	Explanation
2	5	num1 = 2 num2 = 5	The values of num1 and num2 are unchanged
5	2	num1 = 2 num2 = 5	The values stored in num1 and num2 are swapped

```
int num1 = 5;
int num2 = 2;
int max = (num1 > num2 ? num1 : num2);
num1 = (num1 == max ? num2 : num1);
num2 = max;
System.out.println("num1 : " + num1 + "num2: " + num2);
```

/3