

CMSC131 QUIZ #2 KEY (DURATION: 15 MINUTES)

FIRSTNAME, LASTNAME (PRINT IN UPPERCASE):

STUDENT ID (e.g. 123456789):

Complete the program below that prints a triangle where each row has twice as many characters as the preceding one. The first row will have 2 characters. The program will read the size (an integer value) of the triangle and a character. It will then generate a triangle with a number of rows that corresponds to size and where the character provided is used for odd-numbered rows. Even-numbered rows will always use a *. We use the message "Enter size:" and "Enter character:" to read data. Below we have provided two examples of running the program. Notice your program must work for other values. Underlined text represent input provided by the user. Write you code in the provided rectangular area.

```
Enter size: 3
Enter character: $
$$
****
$$$$$$$$
```

```
Enter size: 4
Enter character: #
##
****
#####
*****
```

One Possible Solution

```
public class Diagram {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter size: ");
        int maxRows = scanner.nextInt();
        System.out.print("Enter character: ");
        String symbolProvided = scanner.next(), symbol;

        int initialCnt = 2;
        for (int row = 1; row <= maxRows; row++) {
            if (row % 2 == 0) {
                symbol = "*";
            } else {
                symbol = symbolProvided;
            }
            for (int col = 1; col <= initialCnt; col++) {
                System.out.print(symbol);
            }
            System.out.println(); // newline
            initialCnt *= 2;
        }

        scanner.close();
    }
}
```