CSE110 Review Questions
Prepared by Ryan Dougherty

2D Arrays

Question 1   Create a 2D int array that has a length of 6 and a width of 8.

Question 2   Write the output generated when the following program executes.

```java
public class TwoDArray {
        public static void main(String[] args) {
                int size = 4;
                int[][] t = new int[size][size];
                init(t, size);
                display(t, size);
                rearrange(t, size);
                display(t, size);
        }

        public static void display(int[][] t, int size) {
                System.out.println( "The 2D array" );
                for(int r = 0; r < size; r++) {
                        for(int c = 0; c < size; c++)
                                System.out.print(padWithBlanks(""+t[r][c], 4));
                        System.out.println( );
                }
        }

        public static void init(int t[][], int size) {
                for(int r = 0; r < size; r++)
                        for(int c = 0; c < size; c++)
                                t[r][c] = (r+1)*(c+1);
        }

        public static String padWithBlanks(String numAsString, int width) {
                int blanksToPad = width - numAsString.length();
                for(int j = 1; j <= blanksToPad; j++)
                        numAsString = " " + numAsString;
                return numAsString;
        }

        public static void rearrange(int t[][], int size) {
                for(int r = 0; r < size; r++) {
                        int sum = 0;
                        for(int c = 0; c < size; c++) {
                                sum += t[r][c];
```

```
                                    t[r][c] = 0;
                }
                t[r][r] = sum;
            }
        }
}
```