**Worksheet 15.2 – Answer Sheet**

### Two-Dimensional Arrays

1.

5 8 4 3 9 5

6 4 9 5 3 2

2 2 0 9 7 3

7 4 5 6 9 5

8 8 3 2 6 4

9 5 6 3 7 6

5 0 0 3 9 5

0 0 9 5 3 0

0 0 0 9 7 3

7 0 5 0 9 5

0 0 3 0 0 0

9 5 0 3 7 0

2. The following lines of code should be added to the main method:

app.check(matrix);

app.display(matrix);

The following methods should be added:

**public void** copy(**int**[][] source, **int**[][] target){

**int** row, col;

**for** (row = 0; row < NUM; row++){

**for** (col = 0; col < NUM; col++){

target[row][col] = source[row][col];

}

}

}

**public void** check(int[][] grid){

**int** row, col;

**int**[][] gridCopy = new int[NUM][NUM];

copy(grid,gridCopy);

**for** (row = 0; row < (NUM); row++){

**for** (col = 0; col < (NUM); col++){

**int** count = 0;

**if**(((row-1)>=0) && ((col-1)>=0) && gridCopy[row-1][col-1] == 0)

count++;

**if** (((row-1)>=0) && ((col+1)<NUM) && gridCopy[row-1][col+1] == 0)

count++;

**if** (((row+1)<NUM) && ((col-1)>=0) && gridCopy[row+1][col-1] == 0)

count++;

**if** (((row+1)<NUM) && ((col+1)<NUM) && gridCopy[row+1][col+1] == 0)

count++;

grid[row][col] = count;

}

}

}