Quiz2

Week 1

Monday

Name: _____

Instructions:

1. **Wait to start until the TA tells you to do so. Do not turn the page yet.**
2. You will have forty minutes to complete up to two of the two questions. We will grade both questions and you will keep the higher score of the two.
3. Please turn in this quiz sheet when finished. You may either sit quietly at your desk (no laptops), or, preferably, leave the room and return when the quiz is over for the class.
4. The maximum possible score for Problem 1 (the problem you have seen) is 80 points; the maximum score of Problem 2 (the unseen problem) is 100 points.

Problem 1: Share Point (max score of 80 points)

Imagine that the user specifies with width and height of a grid, and provides two tiles in that grid. You will write code to determine if the two tiles share only a point. For example, in the following 3x3 gird,

1	2	3
4	5	6
7	8	9

tiles 1 and 5 share a single point, but 1 and 4 do not (they share an edge). In this case, your code would return "point" for tiles 1 and 5, and "not point" for tiles 1 and 4.

You may use the following formulas in your solution as needed:

```
row = (tile - 1) / width
```

Please do not use any Java code or libraries that we have not covered in class; this defeats the purpose of the assessment.

See the test cases below, and then complete the template.

```
/*
            SAMPLE ASSESSMENT2_2
*/

public class Assess2_2_Sample{

  public static void main(String[] args){
    System.out.println("test1: " + checkPoint(1,1,1,1).equals("not point"));
    System.out.println("test2: " + checkPoint(1,2,1,1).equals("not point"));
    System.out.println("test3: " + checkPoint(1,2,1,2).equals("not point"));
    System.out.println("test4: " + checkPoint(1,2,2,1).equals("not point"));
    System.out.println("test5: " + checkPoint(1,2,2,2).equals("not point"));
    System.out.println("test6: " + checkPoint(2,1,1,1).equals("not point"));
    System.out.println("test7: " + checkPoint(2,1,1,2).equals("not point"));
    System.out.println("test8: " + checkPoint(2,1,2,1).equals("not point"));
    System.out.println("test9: " + checkPoint(2,1,2,2).equals("not point"));
    System.out.println("test10: " + checkPoint(2,2,1,2).equals("not point"));
    System.out.println("test11: " + checkPoint(2,2,1,3).equals("not point"));
    System.out.println("test12: " + checkPoint(2,2,1,4).equals("point"));
    System.out.println("test13: " + checkPoint(2,2,2,1).equals("not point"));
    System.out.println("test14: " + checkPoint(2,2,2,3).equals("point"));
    System.out.println("test15: " + checkPoint(2,2,2,4).equals("not point"));
    System.out.println("test16: " + checkPoint(2,2,3,1).equals("not point"));
    System.out.println("test17: " + checkPoint(2,2,3,2).equals("point"));
    System.out.println("test18: " + checkPoint(2,2,3,4).equals("not point"));
    System.out.println("test19: " + checkPoint(2,2,4,1).equals("point"));
```

```
    System.out.println("test20: " + checkPoint(2,2,4,2).equals("not point"));
    System.out.println("test21: " + checkPoint(2,2,4,3).equals("not point"));
    System.out.println("test22: " + checkPoint(2,3,1,2).equals("not point"));
    System.out.println("test23: " + checkPoint(2,3,1,3).equals("not point"));
    System.out.println("test24: " + checkPoint(2,3,1,4).equals("point"));
    System.out.println("test25: " + checkPoint(2,3,1,5).equals("not point"));
    System.out.println("test26: " + checkPoint(2,3,1,6).equals("not point"));
    System.out.println("test27: " + checkPoint(2,3,2,1).equals("not point"));
    System.out.println("test28: " + checkPoint(2,3,2,3).equals("point"));
    System.out.println("test29: " + checkPoint(2,3,2,4).equals("not point"));
    System.out.println("test30: " + checkPoint(2,3,2,5).equals("not point"));
    System.out.println("test31: " + checkPoint(2,3,2,6).equals("not point"));
    System.out.println("test32: " + checkPoint(2,3,3,4).equals("not point"));
    System.out.println("test33: " + checkPoint(2,3,3,5).equals("not point"));
    System.out.println("test34: " + checkPoint(2,3,3,6).equals("point"));
    System.out.println("test35: " + checkPoint(2,3,4,5).equals("point"));
    System.out.println("test36: " + checkPoint(2,3,4,6).equals("not point"));
    System.out.println("test37: " + checkPoint(2,3,5,6).equals("not point"));
    System.out.println("test38: " + checkPoint(3,2,1,2).equals("not point"));
    System.out.println("test39: " + checkPoint(3,2,1,3).equals("not point"));
    System.out.println("test40: " + checkPoint(3,2,1,4).equals("not point"));
    System.out.println("test41: " + checkPoint(3,2,1,5).equals("point"));
    System.out.println("test42: " + checkPoint(3,2,1,6).equals("not point"));
    System.out.println("test43: " + checkPoint(3,2,2,1).equals("not point"));
    System.out.println("test44: " + checkPoint(3,2,2,3).equals("not point"));
    System.out.println("test45: " + checkPoint(3,2,2,4).equals("point"));
    System.out.println("test46: " + checkPoint(3,2,2,5).equals("not point"));
    System.out.println("test47: " + checkPoint(3,2,2,6).equals("point"));
    System.out.println("test48: " + checkPoint(3,2,3,4).equals("not point"));
    System.out.println("test49: " + checkPoint(3,2,3,5).equals("point"));
    System.out.println("test50: " + checkPoint(3,2,3,6).equals("not point"));
    System.out.println("test51: " + checkPoint(3,2,4,5).equals("not point"));
    System.out.println("test52: " + checkPoint(3,2,4,6).equals("not point"));
    System.out.println("test53: " + checkPoint(2,3,5,6).equals("not point"));

  }

}
```

```
public static String checkPoint(int width, int height, int tile1, int tile2){
    //YOUR ANSWER BELOW
```

```
//extra sheet if needed

  }
}
```

Problem 2: Get Square Middle (max score of 100 points)

Write code that will return one of the two integers:

1) If the board width and height are not the same, and not both even, return -1
2) Otherwise, return the sum of the center four tiles of any board that does not fall under the condition above.

Here are some example test cases for a function defined as:

```
public static int getSquare(int width, int height)


getSquare (3, 4) will return -1

getSquare (3, 3) will return -1

getSquare (6, 6) will return 74 (which is 15 + 16 + 21 + 22)
```

Complete the template below. Please do not use any Java code or libraries that we have not covered in class; this defeats the purpose of the assessment.

```
  public static int getSquare (int width, int height, int tile)

        // YOUR ANSWER HERE
```

```
// extra page if needed

}
```

SCRATCH PAPER

SCRATCH PAPER