# CSE 213 – Homework 1 Rubric

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| Problem | Score | Total |
|---|---|---|
| **Style Guidelines (7 points)** | 7 | **7** |
| Submission is named `cse213_<firstname>_<lastname>_hw1.tar.gz` | 1 | 1 |
| Packages are named `oop.<firstinitial><lastname>.hw1.<number>` | 1 | 1 |
| Code follows Google's style guide reasonably well, and uses four-space indentation | 5 | 5 |
| **Point.java** | 17 | **17** |
| Class has two private attributes with getters and setters | 2 | 2 |
| Default constructor creates the point (0,0) | 2 | 2 |
| Main constructor directly sets x and y | 2 | 2 |
| Copy constructor sets x and y to match another given point | 3 | 3 |
| **distance()** returns $\sqrt{((x_1 - x_2)^2 + (y_1 - y_2)^2)}$ | 4 | 4 |
| **distanceFromOrigin()** returns $\sqrt{(x^2 + y^2)}$ | 4 | 4 |
| **Rectangle.java** | 24 | **28** |
| Class has four private attributes with getters and setters | 2 | 2 |
| Default constructor creates a rectangle at (0,0) and (1,1) | 2 | 2 |
| Main constructor checks the orientations of the given coordinates, and corrects them in case of any logical errors | 5 | 5 |
| Second constructor creates a rectangle of the given width and height; handles negative inputs correctly<br>• **Negative inputs are not handled (-2 point)** | 3 | 5 |
| **perimeter()** returns 2w + 2h | 3 | 3 |
| **area() returns** w x y | 3 | 3 |
| **distanceFromOrigin()** returns $\sqrt{(x^2 + y^2)}$, where (x, y) is the lower left corner<br>• **Distance is not calculated correctly (-2 points)**<br>  ◦ **The x and y coordinates of the lower left and upper right points are multiplied, but the x and y coordinates of the lower left point needs to be squared** | 2 | 4 |
| **inBounds()** checks that lowerLeftX ≤ x ≤ upperRightX and lowerLeftY ≤ y ≤ upperRightY | 4 | 4 |
| **Circle.java** | 30 | **30** |

| | | |
|---|---|---|
| Submission includes accurate UML diagram | 10 | 10 |
| Class has two private attributes with getters and setters | 2 | 2 |
| Default constructor creates a unit circle | 2 | 2 |
| Main constructor directly sets x, y, and radius | 2 | 2 |
| **area()** returns pi * $r^2$ | 3 | 3 |
| **perimeter()** returns 2*pi*r | 3 | 3 |
| **distanceFromOrigin()** returns $\sqrt{(x^2 + y^2)}$ | 4 | 4 |
| **inBounds()** checks that the distance from the given point to the center is ≤ the radius | 4 | 4 |
| **Test.java**<br>Note: Each test should check for a specific error and report it in the cares that it happens. A test that reveals a bug is valid, as long as that bug is documented! A bug takes points off from the class it belongs to, not the test that finds is. | 17 | **18** |
| At least 5 unit tests for **Point.java** one for each constructor and method | 5 | 5 |
| At least 7 unit test for **Rectangle.java,** one for each constructor and method – if the example test from the PDF is used, then there should be *another* test for the main constructor!<br>• **Test for main constructor is identical to the example test and no other test is provided (-1 point)** | 6 | 7 |
| At least 6 unit tests for **Circle.java,** one for each constructor and method | 6 | 6 |
| **Total Score** | 95 | **100** |