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Homework #3

06 September 2021

1)

```
private static boolean pointIsInCircle(double xCoord, double yCoord) {  
    double x = xCoord;  
    double y = yCoord;  
    if (Math.pow(x - 1, 2) + Math.pow(y - 1, 2) <= 1) {  
        return true;  
    }  
  
    return false;  
}
```

2)

```
private static int numberOfPointsInCircle(int n) {  
    int count = 0;  
    for (int i = 0; i < n; i++) {  
        double xCoord = Math.random() * 2;  
        double yCoord = Math.random() * 2;  
        if (pointIsInCircle(xCoord, yCoord)) {  
            count++;  
        }  
    }  
  
    return count;  
}
```

3)

```
SimpleReader input = new SimpleReader1L();  
SimpleWriter output = new SimpleWriter1L();  
/*  
 * Ask user for number of points to generate  
 */  
output.print("Number of points: ");  
int n = input.nextInteger();  
double four = 4.0;  
  
int inCircle = numberOfPointsInCircle(n);  
double estimate = (four * inCircle) / n;  
output.print(  
    "Estimate of area of Circle of radius 1 centered at (1,1): "  
    + estimate);
```