```
  1   // Second program with constants and helper functions
  2   // demonstrating primitive parameters
  3
  4   // In the code below there are
  5   //     - 4 different syntax errors and
  6   //     - 1 semantic error
  7
  8   // Study the code
  9   //     - to understand its functioning
 10   //     - to answer the questions (what is it? -> name each) and
 11   //       fill the blanks _____
 12   //     - to identify its five errors
 13
 14
 15   // imports would be HERE
 16   //    everything else in class, in between { }
 17   //
 18
 19   class Prog2 {
 20
 21       // what are they?
 22       // a _____
 23       // their scope = entire class; final means should not be changed (l. 31)
 24       public static final double PI = 3.14;
 25       public static final char LINE_SYMBOL = '*';
 26
 27
 28
 29       // what is it?
 30       // an _____
 31
 32       public static int circlePerimeter(double r) {
 33
 34
 35           return 2 * PI * r;
 36       }
 37
 38
 39                                       // r is a _____ parameter
 40       public       double circleArea(double r) {
 41
 42           //System.out.println("1. circleArea value " + r);
 43           squareMe(r);
 44           //System.out.println("2. circleArea value " + r);
 45
 46           return PI * r;
 47
 48
 49       }
 50
 51       public static int squareMe(double f) {
 52           //System.out.println("1. squareMe value " + f);
 53           f = f * f;
 54           //System.out.println("2. squareMe value " + f);
 55
 56           return 0;
 57       }
 58
 59       // for loop syntax
 60       public       String printManyChar(int m, char c) {
 61
 62           for (int i = 0; i<m; i++)
 63               System.out.print(c);
 64
 65           System.out.println();
 66       }
 67
 68
 69       public static void main(String[] args) {
 70
 71           double radius = 2.0;
 72
 73           double perim = circlePerimeter(radius);
 74
 75                               // radius is _____ parameter
 76           double area = circleArea(radius);
 77
 78           printManyChar(LINE_SYMBOL, 30);
 79
 80           System.out.println("A circle of radius " +  radius + " has");
 81           System.out.println("  - a perimeter of " +  perim);
 82           System.out.println("  - an area of " +  area);
 83
 84           printManyChar(LINE_SYMBOL, 30);
 85       }
 86
 87
 88   }
 89
 90
 91
 92
```

```
 93      // Our in-class process. One thing at a time
 94
 95
 96
 97      // Fixed 4 syntax errors
 98      //
 99
100
101
102
103
104
105
106
107      // then semantic problem
108
109
110
111
112
113      // Testing
114      // Give radius 2.0 (weird, but better than 1 for debug)
115      //                   -> does it make sense?
116      // Show radius 1.0
117      //        then 3.0
118
119
120
121      // Learning outcomes
122      // 1. parameters vocabulary
123      // 2. primitive as param:
124      //        - value is copied thus
125      //           change not persistent across function call
126      //   (local change doesn't influence the variable whose value was copied)
127      //         ---> need RETURN
128      // 3. scope
129
```