```java
 1 import components.simplereader.SimpleReader;
 5
 6 /**
 7  * Put a short phrase describing the program here.
 8  *
 9  * @author Put your name here
10  *
11  */
12 public final class Newton2 {
13
14     /**
15      * Private constructor so this utility class cannot be
   instantiated.
16      */
17     private Newton2() {
18     }
19
20     /**
21      * y Computes estimate of square root of x to within relative
   error 0.01%.
22      *
23      * @param x
24      *            positive number to compute square root of
25      * @return estimate of square root
26      */
27     private static double sqrt(double x) {
28         double guess = x;
29         double error = .0001;
30         if (x == 0) {
31             return 0;
32         } else {
33             while (Math.abs(guess * guess - x) / x > error * error)
   {
34
35                 guess = (guess + x / guess) / 2;
36             }
37         }
38
39         return guess;
40     }
41
42     /**
43      * Main method.
44      *
```

```java
45        * @param args
46        *               the command line arguments
47        */
48       public static void main(String[] args) {
49           SimpleReader in = new SimpleReader1L();
50           SimpleWriter out = new SimpleWriter1L();
51
52           String answer;
53           do {
54               out.println("Enter number to calculate square root of:
   ");
55               double number = in.nextDouble();
56               double sqrtOfNum = sqrt(number);
57               out.println("Square root of " + number + " is " +
   sqrtOfNum);
58               out.println("Do you wish to calculate square root?[y/
   n]: ");
59               answer = in.nextLine();
60           } while (answer.equals("y"));
61
62           in.close();
63           out.close();
64       }
65
66 }
67
```