

```
1  public class Ch17Demo_Math_Recursion_Power_and_Factorial
2  {
3      public static void main(String [] args)
4      {
5          int base = 3;
6          int exponent = 4;
7
8          System.out.println (base + " to the " + exponent + " power is " +
9              power (base, exponent ));
10
11         System.out.println ("The factorial of " + base + " is: " +
12             factorial (base));
13     }
14
15     public static int factorial (int base)
16     {
17         // precondition: 0 <= base
18
19         if (base != 0)
20         {
21             return (base * factorial (base - 1));
22         }
23         else
24         {
25             return 1;
26         }
27     }
28
29     public static int power (int base, int exponent )
30     {
31         // precondition: 0 <= exponent
32
33         if (exponent != 0)
34         {
35             return (base * power (base, exponent - 1));
36         }
37         else
38         {
39             return 1;
40         }
41     }
42
43 }
```