

Given a number x , complete the program below named `Power` that computes the value of x^n , where n is an integer. While the value of the double variable x can be positive or negative, the value of the integer n should be non-negative.

Input: x , the value to be raised to the n th power.

Input: n , the value of the power.

Output: x^n , the value of x raised to the n th power.

Complete the following code:

```
import java.util.Scanner;

/**
 * Computes  $x^n$  ( $x$  raised to the  $n$ th power). Although the value
 * of  $x$  can be positive or negative, the value of the integer  $n$ 
 * should be non-negative.
 *
 * Input:  $x$ , the double value to be raised to the  $n$ th power.
 * Input:  $n$ , the integer value to which  $x$  is to be raised.
 * Output:  $x^n$  -- the value of  $x$  raised to the  $n$ th power.
 */
public class Power
{
    public static void main(String[] args)
    {
        // Read value for n
        Scanner in = new Scanner(System.in);
        double x = in.nextDouble();
        int n = in.nextInt();

        // your work here

        System.out.println(power);
    }
}
```

Complete the following file:

Power.java

```
7
8     Input:  $x$ , the double value to be raised to the  $n$ th power.
9     Input:  $n$ , the integer value to which  $x$  is to be raised.
10    Output:  $x^n$  -- the value of  $x$  raised to the  $n$ th power.
11    */
12    public class Power
13    {
14        public static void main(String[] args)
15        {
16            // Read value for n
17            Scanner in = new Scanner(System.in);
18            double x = in.nextDouble();
19            int n = in.nextInt();
20
21            int i;
22            if (n < 0)
23            {
24                System.out.println("n has to be positive");
25            }
```

```
26     double power = 1.0;
27     for (i = 0; i < n; i++)
28     {
29         power = power * x;
30     }
31
32
33     System.out.println(power);
34 }
35 }
```

Testing Power.java

Test 1

3.0 4
81.0

pass

Test 2

2.0 7
128.0

pass

Test 3

-1.5 3
-3.375

pass

Test 4

-5.0 4
625.0

pass

Test 5

1 20
1.0

pass

Test 6

4321.0 0
1.0

pass

Student files

Power.java:

```
1  import java.util.Scanner;
2
3  /**
4   * Computes x^n (x raised to the nth power). Although the value
5   * of x can be positive or negative, the value of the integer n
6   * should be non-negative.
7
8   * Input: x, the double value to be raised to the nth power.
9   * Input: n, the integer value to which x is to be raised.
10  * Output: x^n -- the value of x raised to the nth power.
11  */
12  public class Power
13  {
14      public static void main(String[] args)
15      {
16          // Read value for n
17          Scanner in = new Scanner(System.in);
18          double x = in.nextDouble();
19          int n = in.nextInt();
20
21          int i;
22          if (n < 0)
23          {
24              System.out.println("n has to be positive");
25          }
26          double power = 1.0;
27          for (i = 0; i < n; i++)
28          {
29              power = power * x;
30          }
31
32          System.out.println(power);
33      }
34  }
```

Score

6/6

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