Exercise: power recur

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5.0/5.0 points (graded)
ESTIMATED TIME TO COMPLETE: 7 minutes

In Problem 1, we computed an exponential by iteratively executing successive multiplications. We can use the same idea, but in a recursive function.

Write a function `recurPower(base, exp)` which computes base^{exp} by recursively calling itself to solve a smaller version of the same problem, and then multiplying the result by `base` to solve the initial problem.

This function should take in two values - `base` can be a float or an integer; `exp` will be an integer ≥ 0. It should return one numerical value. Your code must be recursive - use of the `**` operator or looping constructs is not allowed.

```
def recurPower(base, exp):
    '''
    base: int or float.
    exp: int >= 0

    returns: int or float, base^exp
    '''
    # Your code here
    if exp == 1:
        return base
    elif exp == 0:
        return 1
    else:
        return base * recurPower(base, exp-1)
```

Press ESC then TAB or click outside of the code editor to exit

Correta

```
def recurPower(base, exp):
    '''
    base: int or float.
    exp: int >= 0

    returns: int or float, base^exp
    '''
    # Base case is when exp = 0
    if exp <= 0:
        return 1

    # Otherwise, exp must be > 0, so return
    #  base* base^(exp-1). This is the recursive case.
    return base * recurPower(base, exp - 1)
```

Test results

Hide output

CORRECT

Test: recurPower(-6.81, 0)

Output:

```
1.0000
```

Test: recurPower(-2.77, 5)

Output:

```
-163.0793
```

Test: recurPower(9.81, 4)

Output:

```
9261.3869
```

Test: recurPower(-9.94, 10)

Output:

```
9415943502.1021
```

Test: recurPower(-6.59, 6)

Output:

```
81905.3909
```

Test: recurPower(-0.59, 3)

Output:

```
-0.2054
```

Test: recurPower(-4.14, 0)

Output:

```
1.0000
```

Test: recurPower(0.4, 3)

Output:

```
0.0640
```

Hide out

Note: In programming there are many ways to solve a problem. For your code to check correctly here, though, you must write your recursive function such that you make a recursive call directly to the function `recurPower`. Thank you for understanding.

Hints
What should your base case be?
Thinking about recursion

If you are getting the error stating that "Your code should be recursive" when you already make a call to `recurPower`: check your indention -- specifically, a common mistake is that your function and docstring do not start at the same indentation level.

Enviar

Answers are displayed within the problem

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SPOILER: Recursion + While is soo powerfull. def iterPower(base, exp): ''' base: int or float. exp: int >= 0 returns: int or float, base^exp ''' while e...	1
SO MUCH EASIER with Recursion About 10 minutes to figure out the iterative right with while / for, greater or equals, etc. Just 30 se...	5
Not sure why I'm getting a "needs recursive call" error [spoilers] Hi TAs, To be fair, this is not the most elegant of code, but there is a recursive element. So I'm not...	2
can not post in a while loop My provious code with a while True: but when I submit it shows error without a loop. temp = 0 w...	3
using different base case Shouldn't using the base case if exp == 1 then return base also work. I got less points when I sub...	1 new
Grader Says 'Processing' Even After Several Hours Hi, I submitted my code several hours ago but the grader is still 'Processing'. Can a TA take a look ...	3

The grader grades me as incorrect with negative bases and exp == 0 I'm in the understanding that any negative number at exp 0 is equal to -1, and my code evaluates ...	4
Difficulty in understanding recursive methodology Please guide me	2
Spoiler - Is there a neater way to solve this? My answer here was as follows: def recurPower(base, exp): ''' base: int or float. exp: int >= 0 retur...	4
Spoiler - ** is blocked, but its alternative isn't Just as a heads up, returning pow(base, exp) is marked as correct, probably worth blocking that in...	1
Question for exp (spoil alter) in the answer As it is mentioned in the question, exp will be an integer >= 0, why the answer set the if statemen...	2
Question What does return 1 do? I'm really confused about recursion.	2
Don't forget that recurPower has TWO parameters.	2