Exercise: power recur

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5.0 points possible (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.

```
1  def recurPower(base, exp):
2      '''
3      base: int or float.
4      exp: int >= 0
5
6      returns: int or float, base^exp
7      '''
8      # Your code here
9
```

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

Unanswered

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?

To figure out what **base case** to use, think about what the smallest value of `exp` can be.

> Smallest value of exp?

Thinking about recursion

A good way to think about recursion is that recursion is the process of solving a given problem with a smaller instance of the same problem.

So, how could we express $base^{exp}$ as a smaller instance of an exponential equation?

> How to break down the equation

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.