POLYNOMIALS : 10.0 POINTS

For this problem set, we will be representing polynomials as lists. Remember that a polynomial is a sum of powers of a variable, each scaled by a coefficient, for example:

$$p(x) = a_0 + a_1 x + a_2 x^2 + \ldots + a_n x^n$$

We will use the index of a number in the list to represent the power, and the value at that index to represent the coefficient for that term. So for example, the polynomial $-13.39 + 17.5x^2 + 3x^3 + x^4$ would be represented by the list `[-13.39, 0.0, 17.5, 3.0, 1.0]`. This is because the list represents $-13.39x^0 + 0.0x^1 + 17.5x^2 + 3.0x^3 + 1.0x^4$, which is the same as $-13.39 + 17.5x^2 + 3x^3 + x^4$.

Implement the `evaluatePoly` function. This function evaluates a polynomial function for a given value of x. So for example if

$$f(x) = 5x^2 + 9.3x^3 + 7x^4$$

then

$$f(-13) = 5(-13)^2 + 9.3(-13)^3 + 7(-13)^4 = 180339.9$$

`evaluatePoly` takes in a list of numbers, `poly` and a number, `x`, where `x` can be a float or an int. `evaluatePoly` takes the polynomial represented by `poly` and computes its value at `x`. It returns this value as a float.

Example Usage:

```
# f(x) = 5x^2 + 9.3x^3 + 7x^4
>>> poly = [0.0, 0.0, 5.0, 9.3, 7.0]
>>> x = -13
>>> print evaluatePoly(poly, x)
180339.9 # f(-13) = 5*(-13)^2 + 9.3*(-13)^3 + 7*(-13)^4
```

You should implement this function on your own machine, in the file `ps3_newton.py`. Test your code well in Idle, and when you are convinced it is correct, cut and paste your definition into this tutor window.

Here are some example Test Cases to test your code with - feel free to make up your own additional test cases. Be sure to test these on your own machine - and that you get the same output! - before running your code on this

webpage!

```
def evaluatePoly(poly, x):
    '''
    Computes the value of a polynomial function at given value x. Returns that
    value as a float.

    poly: list of numbers, length > 0
    x: number
    returns: float
    '''
    # FILL IN YOUR CODE HERE...

```

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