Name:

On Pre-flights:

- If you work with anyone else, document what you worked on together.

- If you are not using python, then substitute your language of choice when Python is specified.

Do not write in the table to the right.

Problem	Points	Score
1	10	
2	5	
3	10	
4	10	
5	5	
6	5	
7	5	
8	5	
Total:	55	

1. (10 points) Define a function that returns the value of up to a 4-dimensional polynomial for a given input and set of parameters for the polynomial. Only the linear terms must be specified, the other terms are optional.

2. (5 points) Define a function that returns the product (i.e. Π) of an unknown set of numbers.

3. (a) (2 points) What does the '*' operator do as a prefix?

   (b) (2 points) What does the '**' operator do as a prefix?

   (c) (3 points) What is the difference between args and kwargs?

   (d) (3 points) Why might you use kwargs instead of args?

4. (a) (1 point) What properties do first class objects have in Python?

   (b) (3 points) In your own words, describe the meaning of global scope, local scope,

and module scope.

(c) (6 points) What is the value of 'var' at each print statement in this code snippet?

```
var = 12
print var

def func():
    print var
    var = 6
    print var
    def funct():
        print var
        var = 9
        print var
    print var
```

5. (5 points) What is recursion in Python? Why does Python implement default limits for recursion?

6. (5 points) Write a lambda function named sum to calculate the sum of a + b.

7. (5 points) In your own words, describe generators. Thinking of the topics covered in this class, when might this be useful?

8. (5 points) What is one concept that you found difficult in the reading?