Python

1. Write lambdas to:
    a. Square a number x^2
    b. Inverse a number 1/x
    c. Negate a number

2. Use reduce function and an appropriate lambda to find the maximum number in a list.

3. Write a function **map_multiple** that takes a list of functions/lambdas as first argument and a sequence type as second argument.
   The function picks first lambda from list, applies it to first element, then applies the second function to the result of first one and ….
   Similarly it does for each element and generates a mapping of input to output

   def map_multiple(functs, sequence):

   # write definition here

   Ex: let list of lambdas be from question 1 and the list on numbers be [1,2,4]

   So first function gives [1, 4, 16]

   Second gives [1, 0.25, 0.0625]

   Third gives [-1, -0.25, -0.0625]. Which is the final result.

4. Predict the output of following code:

```
from functools import reduce
f = lambda x,y : x if x > y else y

l = [10, 30, 50, 30, 10]
num = reduce(f, l)
print(num)
```

5. Find output of following:

```
functs = [lambda x: x**0.5, lambda x: 1/x]
l = [1, 4, 16, 64]
ans = []
for num in l:
    res = num
    for funct in functs:
        res = funct(res)
    ans.append(res)
print(ans)
```

6. Use filter function to filter a list of numbers and strings such that the result contains only numbers. (Hint : Use isinstance method)

7. Assume a list containing heights ft and inches in the form of a list of string
   Example : l = ['5ft10in', '5ft', ….]
   Write a function to convert the heights to *meter*. Use map function along with your function to convert everything to *m.*
8. Write the implementation for the **map** function yourself by the name **my_map()**