1. Write down what each of the following code snippets will print:

   (a)
   ```
   for x in range(3):
       for y in range(x):
           print(x)
   ```

   (b)
   ```
   for i in range(20):
       if i % 4 == 1:
           print ("i: ", i)
   ```

   (c)
   ```
   xs = [4, 5, 6, "amy", 10, "cars"]
   ys = ["x", "y", "z"]
   zs = [103, 65]
   print(xs + zs + ys)
   ```

2. Write a function that returns the longest word in a list of words.

3. What does the following code snippet print?

   ```
   x = 3
   y = 5
   z = 7
   if x == 3:
       print(y)
   elif y == 5:
       print("??")
   if z == 2:
       print(z)
   else
       print("z")
       z = z + 2
   if z == 9:
       print("Woo!")
   ```

4. Write a function that takes as input, two integer values, x and y, and returns a list of all numbers that are greater than x, less than $x*y$, and divisible by 2. Return an empty list if no numbers satisfy those conditions.

5. Write a function that accepts a list of integers as input and returns $True$ if it is sorted in $descending$ order. Otherwise, it should return $False$.

6. Write a function that takes as input an integer and returns a new function that also takes an integer as input and adds the original integer to it. In other words, write the functions that will allow the following code snippet to run correctly:

```
newAdd = addx(5)
myNum = newAdd(10)
print(newNum) #prints 15
```