

Python for Math and Stat Fall 2022

Exam 1 Version A

1. (20 pts) For the following 4 problems, write down what each code block would display if executed in a Jupyter cell.

(a) `'7' + 2 * '8'`

(b) `alist = ['aardvark', 'gnu', 'zebra']
x = alist[1]
x[1:]`

(c) `[x - 5 for x in range(2, 10, 2) if x > 5]`

(d) `x = 0
for n in range(20):
 if n % 10 == 9:
 x += n
x`

Solution:

(a) `'788'`

(b) `'nu'`

(c) `[1, 3]`

(d) `28`

2. (10 pts) Write a function **tens_digit(num)** that returns the tens digit of a number as an `int`. Assume that `num` is a positive `int` or `float`. **Use only arithmetic operations**, not string operations.

Example:

`tens_digit(4567.8)` returns 6

`tens_digit(4)` returns 0

Solution:

```
def tens_digit(num):  
    intnum = int(num)  
    return (intnum // 10) % 10
```

3. (10 pts) Write a function **count_ee(word)** that takes a string and returns the number of occurrences of 'ee'.

Examples:

`count_ee('meekfleecebees')` returns 3

`count_ee('beep')` returns 2

Solution:

```
def count_ee(word):
    count = 0

    for i in range(len(word)-1):
        if word[i:i+2] == 'ee':
            count += 1

    return count
```

4. (10 pts) Write a function **phone_str(num)** that takes a 10-digit phone number in `int` format and converts it into the corresponding string 'XXX-XXX-XXXX'. (*Hint:* You may wish to convert the number to string format.)

Example:

`phone_str(3034923456)` returns '303-492-3456'

Solution:

```
def phone_str(num):
    strnum = str(num)
    return strnum[:3] + '-' + strnum[3:6] + '-' + strnum[6:]
```