

15-112 Fall 2017 Quiz 4

Up to 20 minutes. No calculators, no notes, no books, no computers. Show your work!

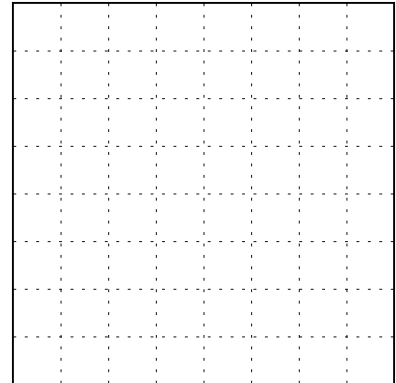
1. (25 points) **Code Tracing:** Given that the box to the right is your canvas, with a width and height of 400 each, draw what the following code would display. You can assume that this is called within the appropriate graphics helper code. **Hint:** each of the small boxes on the canvas is 50x50 pixels.

```
def drawCt(canvas, width, height):
    canvas.create_text(width/2, 0, anchor="n",
                       text="I can do this!")

    points = []
    for i in range(1, 4):
        canvas.create_rectangle(25*i, 50*i,
                               width - 50*i, height - 50*i)

        mult = 3 - ((i + 1) % 3)
        points.append((100 * mult, 100 * i))
    canvas.create_polygon(points)
    canvas.create_line(width, height/2, width/4, height)

drawCt(canvas, 400, 400)
```



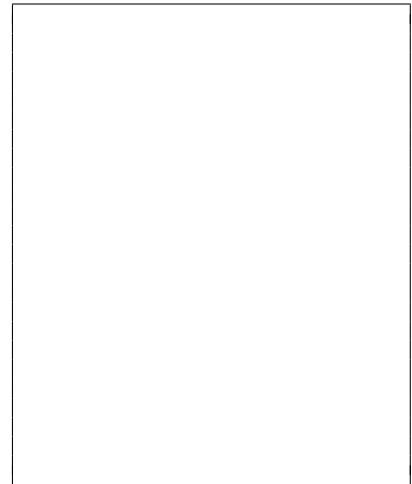
2. (25 points) **Code Tracing:** Indicate what the following program prints. Place your answers (and nothing else) in the box to the right.

```
def solveCt(a):
    a[1] = "foo"
    a[0], a[2] = a[2], a[0]
    print(a)
    b = a

    b.extend([42, "wow"])
    b.pop()
    print(b)
    c = [] + b

    c[1:-1] = ["Hello", "World"]
    return c

lst = [15, "1", "twelve"]
print(solveCt(lst))
print(lst)
```



QUIZ CONTINUES ON THE BACK OF THE PAGE.

3. (50 points) **Free Response:** Two words are anagrams if they contain the same exact letters (but potentially in different orders); for example, ocean and canoe are anagrams of each other, but east and state are not, since state has two t's where east has one.

Write a program `getAllAnagrams(wordList, word)` which takes two parameters, a list of words and a single word. This function should return a list of all anagrams of `word` which occur in the given `wordList`. You may use any built-in Python functions that might be useful.