## Week 06: Problem Set

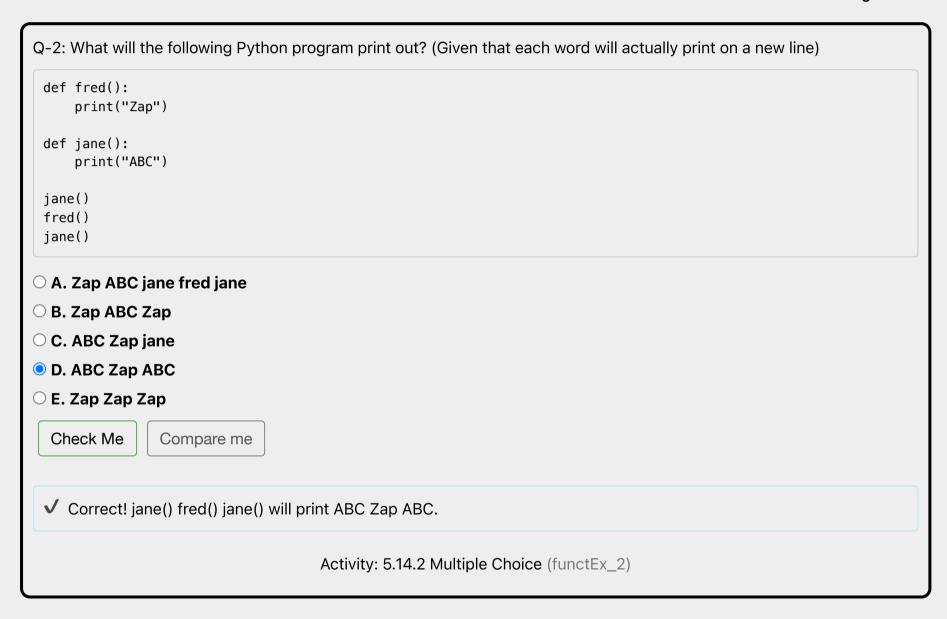
Due: 2023-02-24 23:59:00

Description: Chapter 5 problem set

You have marked this assignment Finished. Click to mark it In Progress

## **Questions**

Not yet graded



Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_2)

Not yet graded

p9-1: What is the purpose of the "def" keyword in Python?

A. It is slang that means "the following code is really cool"

B. It indicates the start of a function

C. It indicates that the following indented section of code is to be stored for later

D. b and c are both true

E. None of the above

Check Me Compare me

✓ Correct! def indicates the start of a function and that the following code is to be stored for later as a function object.

Activity: 5.14.1 Multiple Choice (functEx\_1)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_1)

Not yet graded

```
Q-3: What value is printed when the following code is executed?
 name = "Jane Doe"
 def myFunction(parameter):
     value = "First"
     value = parameter
     print (value)
 myFunction("Second")
○ A. value
B. Second
O. c. parameter
OD. First
E. Jane Doe
  Check Me
                 Compare me
 ✓ Correct! "value" is assigned to the value of parameter which is "Second", so that's what will print.
                                      Activity: 5.14.3 Multiple Choice (functEx_3)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_3)

Not yet graded

p9-5: Consider the following Python code. Which of the following best reflects the order in which these lines of code are processed in Python? Note that line numbers are included on the left.

```
1
    def pow(b, p):
2
        y = b ** p
3
         return y
 4
5
    def square(x):
6
        a = pow(x, 2)
7
         return a
8
9
    n = 5
10
    result = square(n)
11
    print(result)
```

○ A. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

○ B. 1, 2, 3, 5, 6, 7, 9, 10, 11

○ C. 9, 10, 11, 1, 2, 3, 5, 6, 7

O D. 9, 10, 5, 6, 1, 2, 3, 6, 7, 10, 11

E. 1, 5, 9, 10, 5, 6, 1, 2, 3, 6, 7, 10, 11

Check Me

Compare me

✓ Correct! Python starts at line 1, notices that it is a function definition and skips over all of the lines in the function definition until it finds a non-empty line that it no longer included in the function (line 5). It then notices line 5 is also a function definition and again skips over the function body to line 9. On line 10, it notices it has a function to execute, so it goes back and executes that function. That function includes another function call. It returns from the function call and completes the assignment in line 6. Then, it returns the result of line 7 and completes the assignment in line 10. Finally, it will go to line 11 after "square" and the assignment are complete.

Activity: 5.14.5 Multiple Choice (functEx\_5)

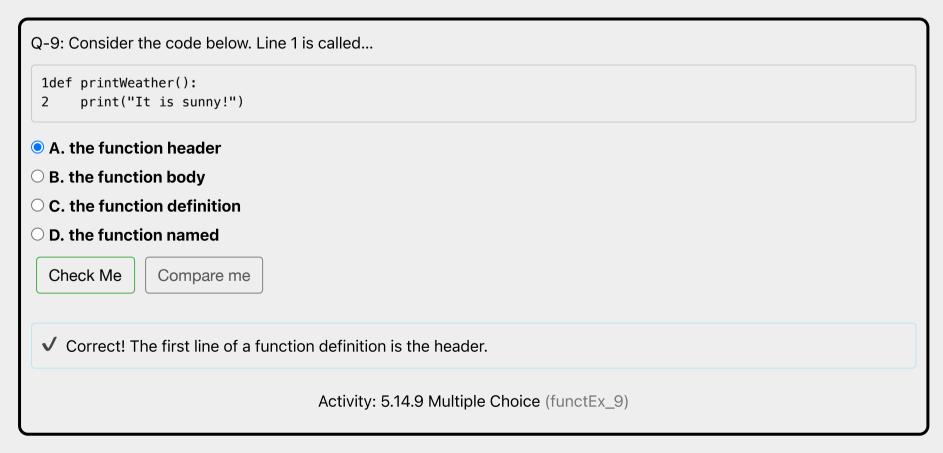
Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_5)

Not yet graded

p9-6: Consider the following Python code. What does this function print? Note that line numbers are included on the left. 1 def pow(b, p): 2 y = b \*\* p3 return y 4 5 def square(x): 6 a = pow(x, 2)7 return a 8 9 n = 510 result = square(n) 11 print(result) O A. 25 ○ B. 5 O C. 125 O D. 10 Check Me Compare me ✓ Correct! The function "square" returns the square of its input (via a call of the "pow" function). Activity: 5.14.6 Multiple Choice (functEx\_6)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_6)

Not yet graded



Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_9)

```
Q-10: Consider the code block below. What happens when you run this program?
 repeat_lyrics()
 def repeat_lyrics():
     print_lyrics()
     print_lyrics()
 def print_lyrics():
     print("I'm a lumberjack, and I'm okay.")
     print('I sleep all night and I work all day.')
○ A. The lyrics print like normal.
○ B. We get a TypeError.
C. We get a NameError.
O D. The program compiles but nothing prints.
  Check Me
                Compare me
 ✓ Correct! You get a NameError when you call a function before it is defined.
                                    Activity: 5.14.10 Multiple Choice (functEx_10)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx\_10)

Not yet graded

```
Fix the 4 errors so the following code runs and returns the perimeter of a rectangle. For example, recPerimeter(10,
20) should return 60.
                                                                  Show CodeLens
                       Save & Run
                                    1/1/2024, 11:14:52 PM - 2 of 2
1 def recPerimeter(length, width):
      perimeter = 2 * (length + width)
2
3
      return perimeter
4
5 # Example usage:
6 result = recPerimeter(10, 20)
7 print(f"The perimeter of the rectangle is: {result}")
8
9
                              Activity: 5.16.1 ActiveCode (funct-ex-perimeterq)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct-ex-perimeterq)

```
Fix the 5 errors so the following code runs and returns the area of a square. For example, squareArea(10) should return 100.

Save & Run

1/1/2024, 11:14:20 PM - 2 of 2

1 def squareArea(sideLength):
2 area = sideLength * sideLength
3 return area
```

```
4 result = squareArea(10)
5 print(f"The area of the square is: {result}")
6
7
8

Activity: 5.16.3 ActiveCode (funct_ex_squareq)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct\_ex\_squareq)

Not yet graded

```
Fix the errors on line 2 so the function nameAndAge returns the string "My name is nameString and I am ageInt years old." For example, nameAndAge("John", 18) should return "My name is John and I am 18 years old."

Save & Run

1/1/2024, 11:11:59 PM - 2 of 2

1 def nameAndAge(nameString, ageInt):
2 return f"My name is {nameString} and I am {ageInt} years old."

3 4 # Example usage:
5 print(nameAndAge("John", 18))
6
7

Activity: 5.16.7 ActiveCode (funct_ex_nameq)
```

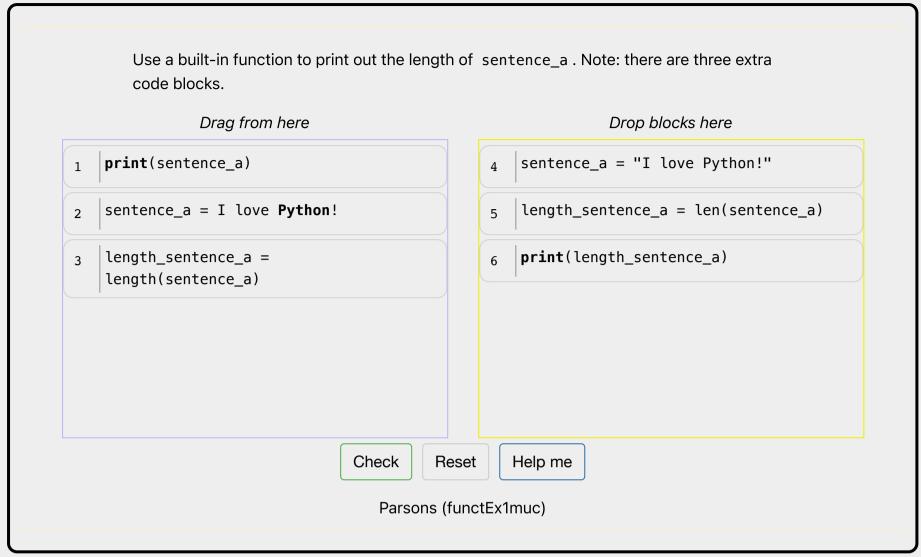
Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct\_ex\_nameq)

Not yet graded

```
Change the code below to create a function tripCost that calculates the cost of a trip. It should take the miles,
 milesPerGallon, and pricePerGallon as parameters and should return the cost of the trip. For example,
 tripCost(100, 25, 2.24) should return 8.96.
                                                                   Show CodeLens
                        Save & Run
                                     1/1/2024, 11:11:03 PM - 3 of 3
 1 def tripCost(miles, milesPerGallon, pricePerGallon):
 2
       numGallons = miles / milesPerGallon
 3
       total = numGallons * pricePerGallon
       return total
 4
 6 # Example usage:
 7 \text{ miles} = 100
 8 \text{ milesPerGallon} = 25
 9 pricePerGallon = 2.24
10
11 cost_of_trip = tripCost(miles, milesPerGallon, pricePerGallon)
12 print(f"The cost of the trip is: {cost_of_trip}")
13
                                 Activity: 5.16.6 ActiveCode (funct_ex_tripq)
```

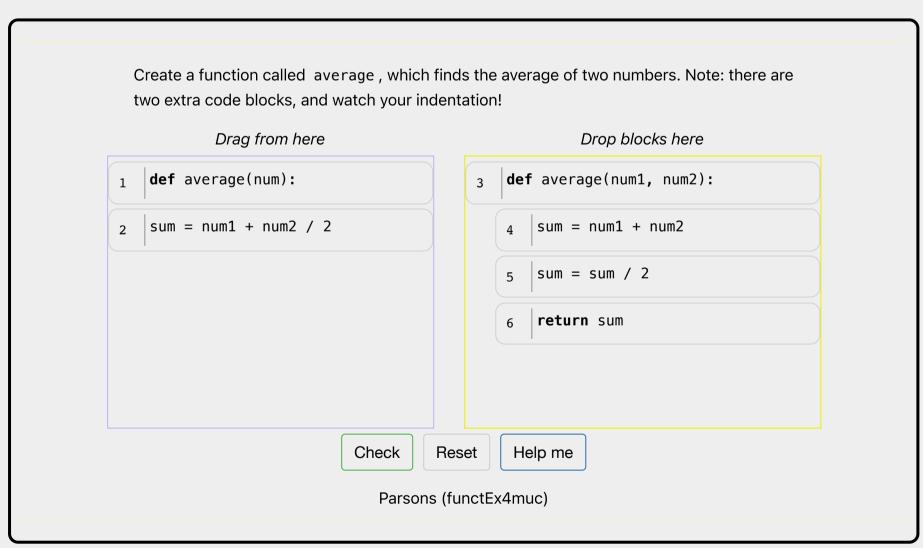
Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct\_ex\_tripq)

Not yet graded

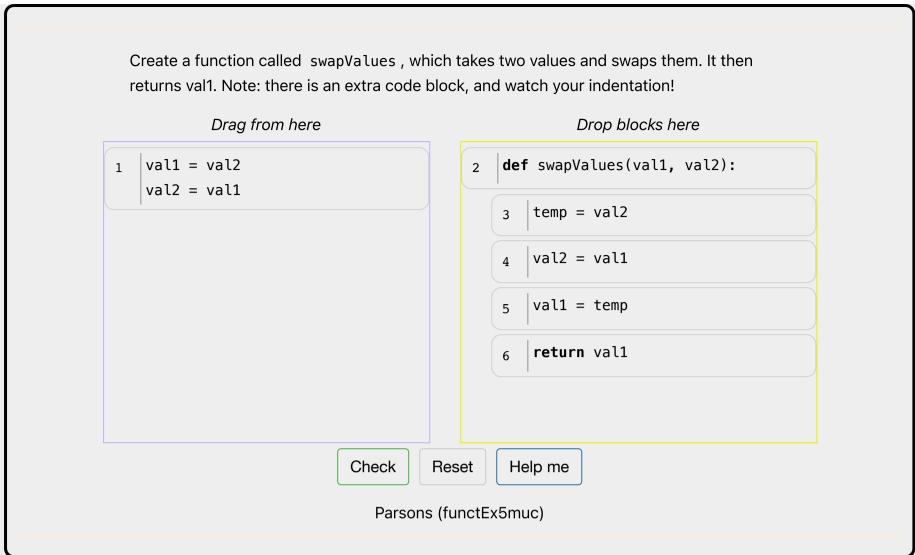


Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx1muc)

Not yet graded

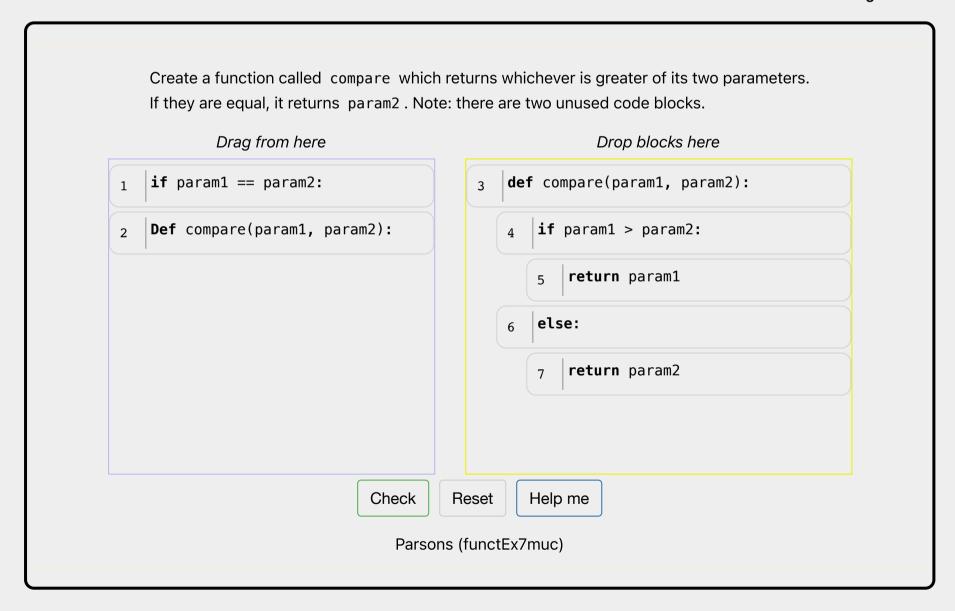


Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx4muc)



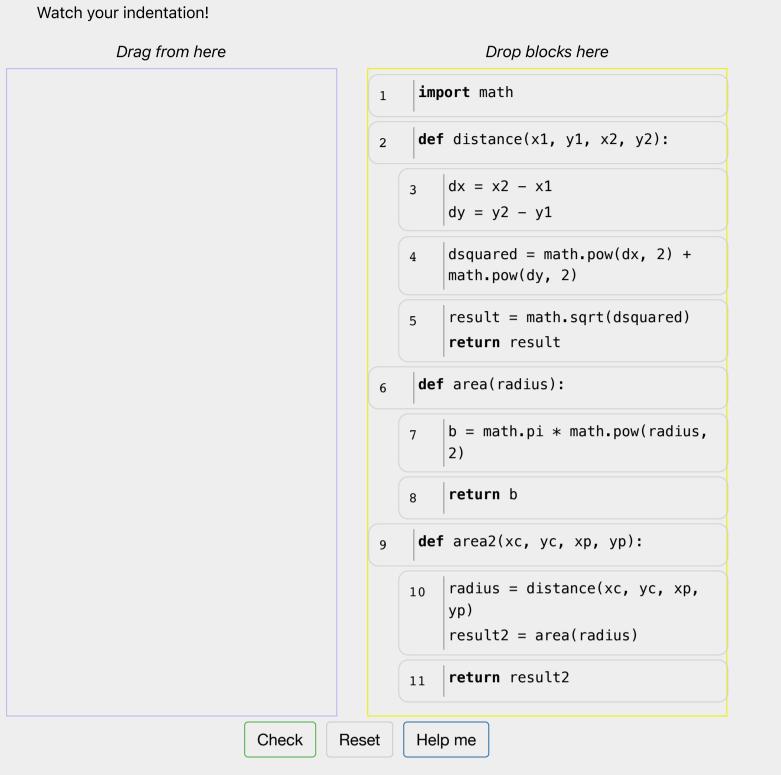
Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx5muc)

Not yet graded



Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx7muc)

The following code creates three functions that use Python's math module to calculate geometric equations. First, create a function called distance which finds and returns the distance between two coordinates using the distance formula:  $d = \sqrt{((x_2 - x_1)^2 + (y_2 - y_1)^2)}$ . Then, create a function called area which returns the area of a circle given its radius using the formula:  $A = \pi r^2$ . Finally, create a function called area2 which uses the distance function to find the radius and the area function to find the circle's area.



Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx12muc)

Parsons (functEx12muc)

Not yet graded

Change the code so that areaTriangle takes parameters for the base and height of a triangle and computes its area.

Then, write code to call the function and print the result. For example, areaTriangle(12,45) should return 270.

Save & Run

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1 def areaTriangle(base, height):
2 return (base \* height) / 2
3 base\_length = 12
4 height\_length = 45
5 result = areaTriangle(base\_length, height\_length)
6 print(f"The area of the triangle with base {base\_length} and height {height\_length} is:
7

8

Activity: 5.16.4 ActiveCode (funct\_ex\_triangleq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct\_ex\_triangleq)

You have marked this assignment Finished. Click to mark it In Progress

This assignment is graded and is no longer accepting submissions. You can still do the work, but it is up to your instructor whether they will accept it or not.

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