Name: _____

This test has 13 questions across 10 pages worth a total of 102 points, and is to be completed in 120 minutes. Point totals are labeled next to each question. The exam is closed book, and no calculators or other electronic devices are permitted.

Write the statement out below in the blank provided and sign your name. You may do this before the exam begins.

"I have neither given nor received any assistance in the taking of this exam."

_____

_____

Signature: _____

Tips:

- There may be partial credit for incomplete answers. Write as much of the solution as you can, but bear in mind that we may deduct points if your answers are much more complicated than necessary.
- Use your time wisely. If you are having too much trouble on a question, skip it and return to it later. **Work through the ones you are comfortable with first. Do not get overly captivated by interesting design issues or complex corner cases you're not sure about.**
- If you are given skeleton code to fill in, we will not grade your answer if you alter the skeleton code or write outside the solution box.
- For questions with *square checkboxes*, you may select *more than one* choice.
- Relax, and try to have fun with it! Think of this exam as a checkpoint along your JamCoders journey. You got this!

Staff use only.

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total

1. ***(12 points)*** Write the type of the following values.

```
"Jamaica!!!!!!!!!!!!!!!!!!!"      # Type: _____________________
52                                 # Type: _____________________
52.0                               # Type: _____________________
["Coder"]                          # Type: _____________________
True                               # Type: _____________________
[False, "a", "tomato"]             # Type: _____________________
```

2. ***(10 points)*** What do the following boolean expressions evaluate to? *(Write `True` or `False`)*

```
not (5 > 3)                        # Result: _____________________
(10 == 10) and (4 != 4)            # Result: _____________________
True or (False and True)           # Result: _____________________
(not False) and True               # Result: _____________________
not (True and (not True))          # Result: _____________________
```

3. ***(10 points)*** What do the following expressions evaluate to?

```
((10 % 3) * (1 - 5)) / 2.0         # Result: _____________________
str(3) == "3"                      # Result: _____________________
str(3) == '3'                      # Result: _____________________
(1 + 2) * (1 + 7 // 2)             # Result: _____________________
int("123") != 123                  # Result: _____________________
```

4. ***(4 points)*** What is the proper way of commenting in Python? Tick all that apply.

- ☐ `// This is a comment.`
- ☐ `# This is a comment.`
- ☐ `% This is a comment.`
- ☐ `$ This is a comment.`

5. ***(5 points)*** Tick all the valid variable declarations.

```
int = 5                            # A ☐
5 = var                            # B ☐
jam_coder() = "fun"                # C ☐
jam_coder = 1                      # D ☐
uwicampus1 = "pretty"              # E ☐
```

6. ***(10 points)*** Rewrite the following `for` loop using a `while` loop. Your code should produce the same output.

```
total = 0
for i in range(1, 8, 3):
    total = total + i
    print(total)
```

7. ***(6 points)*** Consider the following code and fill in the blanks next to each print statement.

```
w = "Pamplona"
x = [12, 15, 16]

print(type(w))          # What is printed: _____________________

print(type(x))          # What is printed: _____________________

print(x[1:2])           # What is printed: _____________________
```

8. ***(12 points)*** What is the printed value? Read the code carefully! Scratch work may be written in the column on the left. In the column on the right, include **only** the printed values.

a.

```
i = 1
i + 1
print(i)
```

b.

```
my_var = 10
if 0 <= my_var and my_var <= 3:
    print("Jam")
elif 4 <= my_var and my_var <= 10:
    print("Coder")
```

c.

```
my_var = 10
if my_var > 0:
    print("Jam")
if my_var > 4:
    print("Coder")
```

9. ***(9 points)*** Trace through the following blocks of code. After each block, write the final values of `x`, `y`, and `z`.

```
x = 12
y = x + 10
x = x / 3
z = y - x

# Final x value: ______________________

# Final y value: ______________________

# Final z value: ______________________
```

```
x = [1,2,3]
x[0] = 10
y = x
y[1] = 20
z = "Hello"
x[2] = 5

# Final x value: ______________________

# Final y value: ______________________

# Final z value: ______________________
```

```
x = "La Laguna"
y = x[0:3]
z = x[2:6]

# Final x value: ______________________

# Final y value: ______________________

# Final z value: ______________________
```

10. ***(12 points)*** What is the printed output of the following code snippets? If there is an infinite loop, write `"Infinite"`. If there's an error, write `"Error"` and also the reason for the error.

a.

```
num = 0
while num < 6:
    if num % 2 == 0:
        print(num)
    num += 1
```

b.

```
num = 0
if num % 2 == 0:
    while num < 6:
        print(num)
    num += 1
```

c.

```
counter = 0

def increment_counter(n):
    n = n + 1

increment_counter(counter)
print(counter)
```

d.

```
count = 0
for i in range(3):
    for j in range(2):
        count = count + 1

print(count)
```

11. Writing Code! ***(12 points)***

Let's write a function called `goal`, that takes a value `n`, and prints out the even integers between `n` and `0`, inclusive, then prints out `"Goal!"`.

For example, calling `goal(7)` produces the following output:

```
6
4
2
0
Goal!
```

Write your code below. You may not need to use all of the lines.

12. ***(14 points) Optional*** **Challenge Problem:** *Finish other problems before attempting.*

Let's write a `get_jamclass` function that prompts the user for the names of all the students in the class and returns them as a list.

The function should first ask the user how many students are in the class. It should then prompt the user to enter each student's name before returning the complete list of names.

Below is an example interaction in which the user enters `4` as the number of students.

```
How many students are in your class? 4
Andrey
Daniel
Naila
Adrianna
```

After all of the student names have been entered, the function *returns*:

```
['Andrey', 'Daniel', 'Naila', 'Adrianna']
```

Write your code below. You may not need to use all of the lines.

13. ***(16 points) Optional*** **Challenge Problem:** *Finish other problems before doing attempting.*

Let's write a `create_jamaican_flag` function that prints the Jamaican flag using hashtag characters (`"#"`) and underscores (`"_"`).

```
# # _ _ _ _ _ _ _ _ # #
_ _ # # _ _ _ _ # # _ _
_ _ _ _ # # # # _ _ _ _
_ _ # # _ _ _ _ # # _ _
# # _ _ _ _ _ _ _ _ # #
```

Hint: The fourth row is identical to the second row, and the fifth row is identical to the first row.

Write your code below. You may not need to use all of the lines provided.