

CS8, Spring 2017, UCSB
Hw1: worth 50% of Lab01 score (50 total points)

Print this form, staple loose pages together, and write your answers on it.

Accepted: On paper, at *your* lab section on Tuesday, April 11.
Place on the front desk as you walk in, before getting seated.

Name (2 pts): _____

Umail (2 pts): _____@umail.ucsb.edu

Lab Time (2 pts) Circle one: 8am 9am 10am 11am

To answer the questions on this homework, it will be very helpful to have a computer system running Python version 3.x (e.g., 3.4) available to you. To find such as system, you can either:

- * log on to one of the computers in the CSIL computer lab, and access Python 3 there - see posted Lab00 for instructions
- * download Python 3 to your PC or Mac, and access Python 3 there

1. Pages 10-17 present the three types of numbers that we can work with in the Python programming language. These include integers, floating-point, and complex numbers. Which type should be used to represent each of the following values? (Circle the correct one in each case)

a. (2 pts) Your GPA?

integer floating-pt complex

b. (2 pts) The number of students registered for this class?

integer floating-pt complex

c. (2 pts) The square root of -4 ?

integer floating-pt complex

2. (2 pts) Fill in the blank:

A complex number has an imaginary part and a _____ part.

3. (2 pts) In ordinary math, we usually use the letter *i* to represent the square root of negative 1, and we write complex numbers in the format $(a + bi)$. What letter of the alphabet is used in Python to represent the imaginary part of a complex number?

4. (2 pts) What can you type in Python to compute 100 divided by 11, and get back an exact result (i.e. a result with decimals)?

5. (2 pts) If you type your answer to problem 4, what answer do you get back? (Write the entire answer---probably lots of decimal places)

6. (2 pts) What can you type to divide 100 by 11, and discard any remainder?

7. (2 pts) what is the result if you type the expression from question 6 at the Python prompt?

8. Read pages 17-23 about variables and the assignment statement, and then answer these questions:

a. (2 pts) what is the assignment statement that would give the variable `x` the value of 100 divided by 11 (as a floating point number)?

b. (2 pts) Type that assignment statement into Python. Then type the expression `x * 11` at the Python prompt, which should multiply the value of `x` by 11. What result do you get back?

c. (2 pts) On some computers the answer to the previous question is not surprising but on many computers (including the CSIL lab computers) you get back a surprising result. Were you surprised?

9. View the video at <http://cs.ucsb.edu/~mikec/pairvideo.html> (or use link on course Resources page). Then answer the following questions:

a. (6 pts) Did you actually watch the whole video? Assign yourself 0 to 6 points for viewing and paying attention to the whole video. Assign 0 if you didn't watch at all, up to 6 for complete attention.

Certify: I earned _____ points by watching and paying attention to this video.

b. (3 pts) How does it benefit an experienced student if an inexperienced student is pilot for at least half the time?

c. (3 pts) How does it benefit an inexperienced student to be given the freedom by the navigator to attempt and fail at his/her own solution before the navigator assists with a correct solution?

d. (4 pts) Give one advantage to each student for celebrating even a small success of the pilot.

e. (4 pts) If a student comes unprepared, he/she may end up leaning on the other student for a particular lab. What is the disadvantage to this student (the unprepared one)?

End of Hw1