CSCI 150 HW: Python tracing practice

Due: Wednesday, September 5

To receive full credit, for each exercise you should do the following:

1. **Trace**: First, trace the execution of each Python program below, using the template shown in class. That is, scratch work goes in the upper left; keep track of the types and values of any variables in the upper right; and show any printed output from the program at the bottom. You should complete the exercise *without* using the Python interpreter. (You are welcome to refer to your notes or textbook, read Python documentation, look at examples from class, *etc.*; just don't actually run any code.)

2. **Check**: Now run the code. Does the actual output agree with what you wrote down in step 1?

3. **Evaluate**: If your answer to part 1 was different than the actual output, keep experimenting with it, consult the textbook or Python documentation, ask a friend or TA or professor, *etc.* until you can explain why the code works the way it does *and* what your misunderstanding(s) were in part 1. (You do not need to do anything for step 3 if the output agrees exactly with what you wrote in step 1.)

You should consider the code in each exercise separately from the other exercises.

1.
```python
a: float = 3
b: float = 4
hyp: float = (a**2 + b**2)**(1/2)
print("The hypotenuse is " + str(hyp))
```

2.
```python
a1: int = 3
a2: int = a1 + 9
a3: int = a1 + a2
a2 = a1 + a3 - 5
a1 = a1 + 1
a3 = a2 * 2 - a1
a1 = a1 + 1
print(str(a1) + " -> " + str(a2 + a3))
```

3.
```python
zebra: str = "fish"
fish: str = "food"
food: str = "pizza"
print(fish + " = " + food)
pizza: str = "zebra" + fish
print(pizza + "pizza" + zebra + "zebra")
print(str(5 + 2) + "5 + 2")
```