Name:

1. (2 pts) Create a “while” loop that will print the even numbers from 100 **down to** 2, inclusive.
2. (3 pts) Create a “for” loop that will print the numbers from 1 to 100, inclusive. For every multiple of three, instead print “Fizz!”
3. (4 pts) Write code that will take a price from the user. Then print the price, an 20% discount, and the total sale price after the discount.
4. (4 pts) Write two for loops that will print a box of asterisks 10 wide and 7 tall.
5. (2 pts) Write a function that *prints* your favorite cartoon character.
6. (2 pts) Call the function in the prior question.
7. (2 pts) Write a function that *returns* your favorite G-rated word.
8. (2 pts) Call the function in the prior question and print the result.
9. (3 pts) Write a function that takes two numbers and returns their difference.
10. (4 pts) Write code that defines a class called Book. Give it one attribute and one method.
11. (3 pts) Write code that creates an instance of Book. Set the attribute and call the method.
12. (3 pts) Write Python code that will create an array of 100 zeros.
13. (2 pts) Write code to print the second value, and the last value:

my\_list = [55 , 41, 52, 68, 45, 27, 40, 25, 37, 26]

1. (1 pt) Write the code that would print the cell that contains the number 1 given the following grid of numbers:  
   
2. (3 pts) Write code to swap the values 41 and 55. (3 lines of code)

list = [41 , 44, 52, 55, 45, 27, 40, 25, 37, 26]

1. (1 pt) Under what circumstances would a linear search work well, but a binary search would not work at all?
2. (3 pts) Show how to perform a selection sort on the following numbers:

5 1 4 0 2 3

1. (3 pts) Show how to perform a insertion sort on the following numbers:

5 1 4 0 2 3

1. (3 pts) Write code that will take input from a user, and then convert it to a number. Print an error if the conversion fails.
2. (4 pts) Explain what each of the circled items do. Make sure that which item you are explaining is clear.

# The selection sort

def selection\_sort(list):

for curPos in range( len(list) ):

minPos = curPos

# Scan left

for scanPos in range(curPos+1, len(list) ):

if list[scanPos] < list[minPos]:

minPos = scanPos

temp = list[minPos]

list[minPos] = list[curPos]

list[curPos] = temp

1. (4 pts) Explain what each of the circled items do. Make sure that which item you are explaining is clear.

def insertion\_sort(list):

for keyPos in range(1, len(list)):

keyValue = list[keyPos]

scanPos = keyPos – 1

while (scanPos >=0) and (list[scanPos] > keyValue):

list[scanPos+1] = list[scanPos]

scanPos = scanPos – 1

list[scanPos+1] = keyValue

1. (3 pts) Write code to format the following variables:  
   a1=1.1  
   a2=12.02  
   total=a1+a2  
     
   So they print like the following:  
   Amount 1: $ 1.10  
   Amount 2: $ 12.02  
   Total: $ 13.12
2. (2 pts) Explain the relationship between Microsoft and IBM in the mid 1980’s:
3. (1 pt) Where did Apple get the idea for the GUI?
4. (1 pt) Explain the relationship between John Sculley and Steve Jobs:
5. (2 pts) Give two points of information about the history of the internet shown during the in-class video on the last day of class.