Worksheet I

1. Find the answer (do it manually)

2 + 2 - 1 = \_\_\_\_\_\_

50 – 5 \* 6 = \_\_\_\_\_\_

(50 – 5 \* 6) / 5 = \_\_\_\_\_\_

At your screen (jupyter) prompt, try the above and see the results.

2 + 2 + 1

50 – 5 \* 6

(50 – 5\*6) / 5

Do you observe any difference among the three results (hint: type of output)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 19 / 3 # classic division returns a float

19 // 3 # floor division discards the fractional part

19 % 3 # the % operator returns the remainder of the division

6 \* 3 + 1 # result \* divider + remainder

What is ‘#’ for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. tax = 12.5 / 100

price = 200.50

tax \* price

1. x = [3,20,41,710,-92,108]

print (x)

print (x[0])

print (x[1], x[3], x[5])

Fill in the blank

x[\_\_] = 710

x[1:] = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

x[:4] = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

x[\_\_:\_\_] = [20,41]

Note: x[1: ] # integers from position 1 (included) to the end

 x[:4 ] # integer from the beginning to position 4 (excluded)

1. ‘Goodbye World’

“Goodbye World”

‘It isn’t’

‘It isn\’t’

s = 'First line. \nSecond Line'

Try

print('First line. \nSecond Line')

print(s)

Try

print('C:\some\name')

Try

print(r'C:\some\name')

1. prefix = 'Hell'

word = prefix + 'o'

print(word)

Try

print(word[:2])

print(word[2:5])

Try

print(word[:2] + word[2:5])

Try

print('J' + word[1:])

* Write a code to replace ‘llo’ with ‘at’ in the variable word. So the outcome should change from ‘Hello’ to ‘Heat’

myid = 6015555

print('My student ID is', myid)

1. y = ['hello', 'good', 'morning', 'bye', 'hi', 'afternoon']

y[5]

print(y[5])

Observe the difference in the outputs? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

print (y[1],y[5])

Fill in the blank

y[ ] = 'hello'

y[2:] = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

y[:4] = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

y[ : ] = ['good', 'morning', 'bye']

1. x = [3, 20, 41, 710, -92, 108]

for a in x:

 print (a)

Try putting ,either end=" " or end=", " after a. What do you observe? \_\_\_\_\_\_\_\_\_

What if for a in x: is changed to for a in x[1:4]: ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Try

for a in x[1:3]:

 print (a)

for a in x:

 print(a)

for a in x[1:3]:

 print (a)

 for a in x:

 print (a)

What do you observe from the outputs?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

x = [3, 20, 41, 710, -92, 108]

for a in x:

 print (a)

- Adjust the program to print only the 2nd (20) to the 5th (-92) numbers in list x

- Adjust the program to print only the numbers in the odd positions (1st, 3rd, … )

1. list(range(6))

list(range(0,6,2))

Fill in the blank

list(range(10)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

list(range(2,9)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

list(range(2,15,3)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

list(range(\_\_)) = [0,1,2,3,4,5,6,7]

list(range(\_\_,\_\_)) = [11,12,13,14,15]

list(range(\_\_,\_\_,\_\_)) = [9,11,13,15,17,19,21,23]

list(range(5,0,-2)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Fill in the blank

list(range(5,2)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

list(range(\_\_,\_\_,\_\_)) = [5, 4, 3, 2, 1, 0]

1. y = [9,11,13,15,17,19,21,23]

print len(y)

Fill in the blank

len(range(2,20,2)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* What is the function len() for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

list(range(len(y))) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. a = input('a = ')

b = input('b = ')

print (a, b)

print (a+b) # statement 1

a = int(input('a = '))

b = int(input('b = '))

print (a, b)

print (a+b) # statement 2

* What do you observe from statement 1 and statement 2? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Try creating some other variables (x, y, Mynumber, etc.) and assign values to them.
1. Write a program that takes numbers a and b. Then print every number from a to b.

1. for i in range(10):

if i % 2 == 0:

print (i, end=” ”)

* Write a program that prints every number from 1 to 50 that is a multiple of 5.
1. Write a program that takes numbers a and b. Then print every ODD number from a to b.
2. Write a program that takes numbers a and b. Then print every number squared from a to b. (for powering, use \*\* operator)
3. Write a program that takes numbers a and b; a > b. Then print every number from a down to b.
4. Write a program that takes your name and your student ID. Also takes the number of times you want to print your name and your student ID. Then print them out.