

1. Write a program that calculates the distance between two points.

Recall, that if we have two points  $P(x_1, y_1)$  and  $Q(x_2, y_2)$ , then the distance between them is

$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Notes:

- user will provide the point coordinates (therefore, you need to prompt for them)
- in order to use **sqrt** function, you need to *import math library*, and then call it with **math.sqrt(...)**

Here is an unfinished program (you can also grab it from our website, file

[InClassAssignment1\\_sketch.py](#)):

```
def main():
    print("Hello! Let's find the distance between two points, using the
    formula")
    print("distance = sqrt( (x2-x1)^2 + (y2-y1)^2 ).\n")
    x1 = float(input("Enter the x-coordinate of the FIRST point:"))
    y1 = float(input("Enter the y-coordinate of the FIRST point:"))
    print()
    x2 = # put the appropriate code here
    y2 = # put the appropriate code here

    import math
    distance = # put the appropriate code here
    print("The distance between points (" ,x1," ,",y1," ) and (" \
        ,x2," ,",y2," ) is",distance)

main()
```

2. I wrote a program to find the sum of first  $n$  natural numbers, where the value of  $n$  is provided by the user. With some fancy output of the result! Unfortunately it has some syntax errors (about 6)! Fix them please!

Try to do it first without using Python interpreter (mark the places on the paper), then grab the code ([InClassAssignment2\\_mod\\_errors.py](#)) fix the errors and run it – test it.

```
def main():
    print("This program finds the sum of the first n natural numbers,",
    end=' ')
    print("where n is provided by the user.)

    n = int("Please, input a natural number:")

    sum_ == 0 # initially, the sum is 0

    for i in range(1,n+1) # sequence [1,2,3,...,n] will be generated
        print(i,end='+') # makes a fancy output of the final result
        sum_ = sum_ + i # adding the next number in the seq.to the sum

    print("0 ="sum_)

main
```

THE #1 PROGRAMMER EXCUSE  
FOR LEGITIMATELY SLACKING OFF:  
"MY CODE'S COMPILING."

