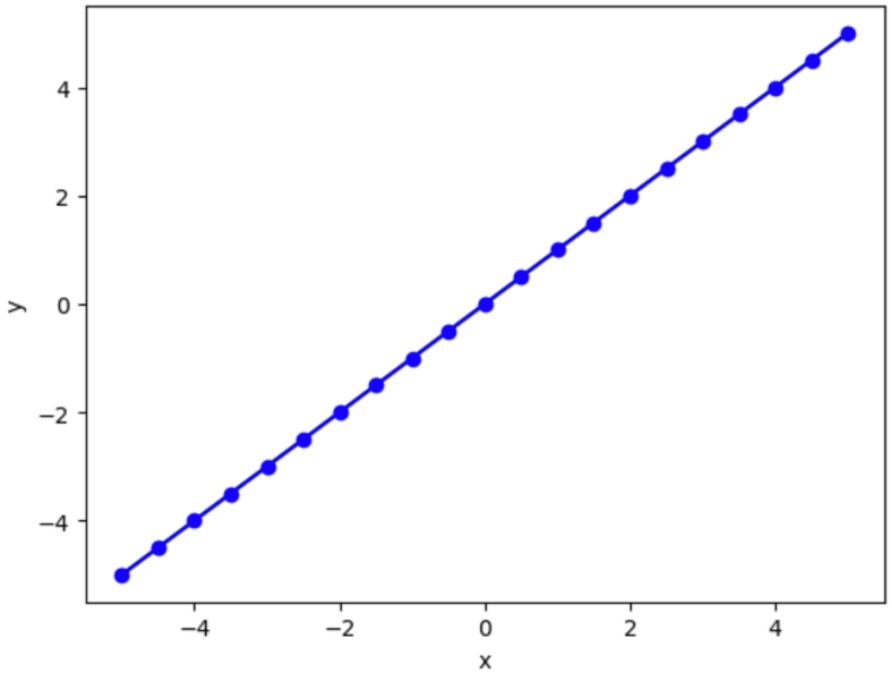
Homework 1 : Write-up

Problem 1.

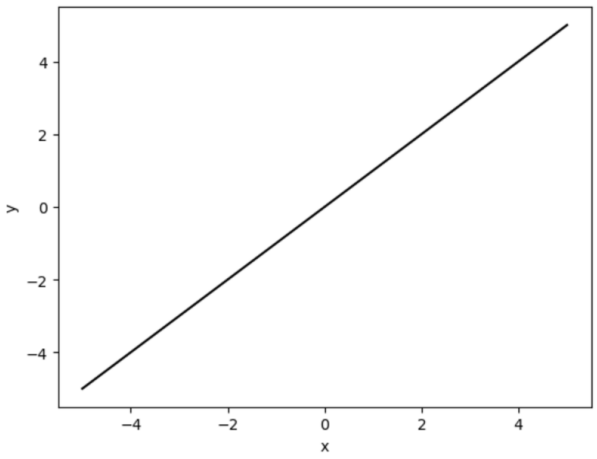


Here, the blue circles are covering the black line that is beneath it. The plot is taking points from -5 to 5, with an increment of .5, and assigning a blue dot to each location. As we can see in the image below, if the line assigning blue markers is commented out, the black line will be displayed.

The code is below:

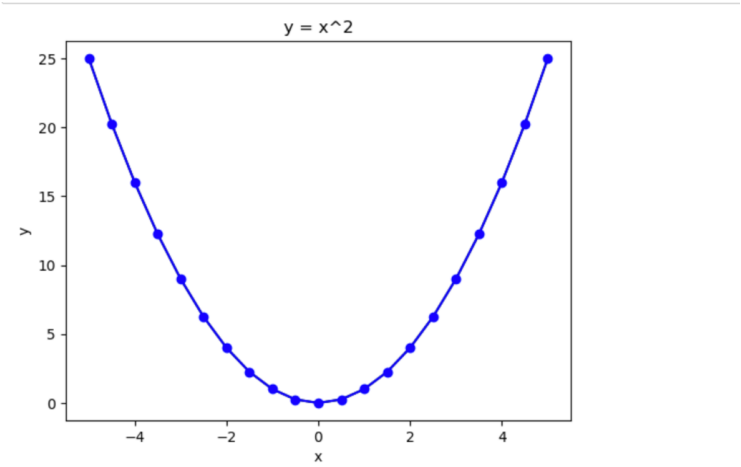
```
import numpy as np
import matplotlib.pyplot as plt

# arranges all points from -5 to 5 with an increment of .5
x = np.arange(-5,5+0.5,0.5)
# assigns y values equal to x values (linear function)
y = x
# plots black line over x and y values
plt.plot(x,y,color = "black")
# plots blue markers over black line
plt.plot(x,y,color = "blue",marker = "o")
# labeling axis
plt.xlabel("x")
plt.ylabel("y")
plt.show()
```



Problem 2.

To display the function f(x) = x^2, all we have to do is change a single line of code from the original problem. We still want to arrange points from -5 to 5, incrementing by .5, but we want to the y values to represent x**2 instead of just x. We can also add a simple title “y = x^2” before plt.show(), resulting in the graph below.



The code is below:

```
import numpy as np
import matplotlib.pyplot as plt
x = np.arange(-5,5+0.5,0.5)
# assign y values to x^2 rather than just x
y = x**2
plt.plot(x,y,color = "black")
plt.plot(x,y,color = "blue",marker = "o")
# add title
plt.title("y = x^2")
plt.xlabel("x")
plt.ylabel("y")
plt.show()
```