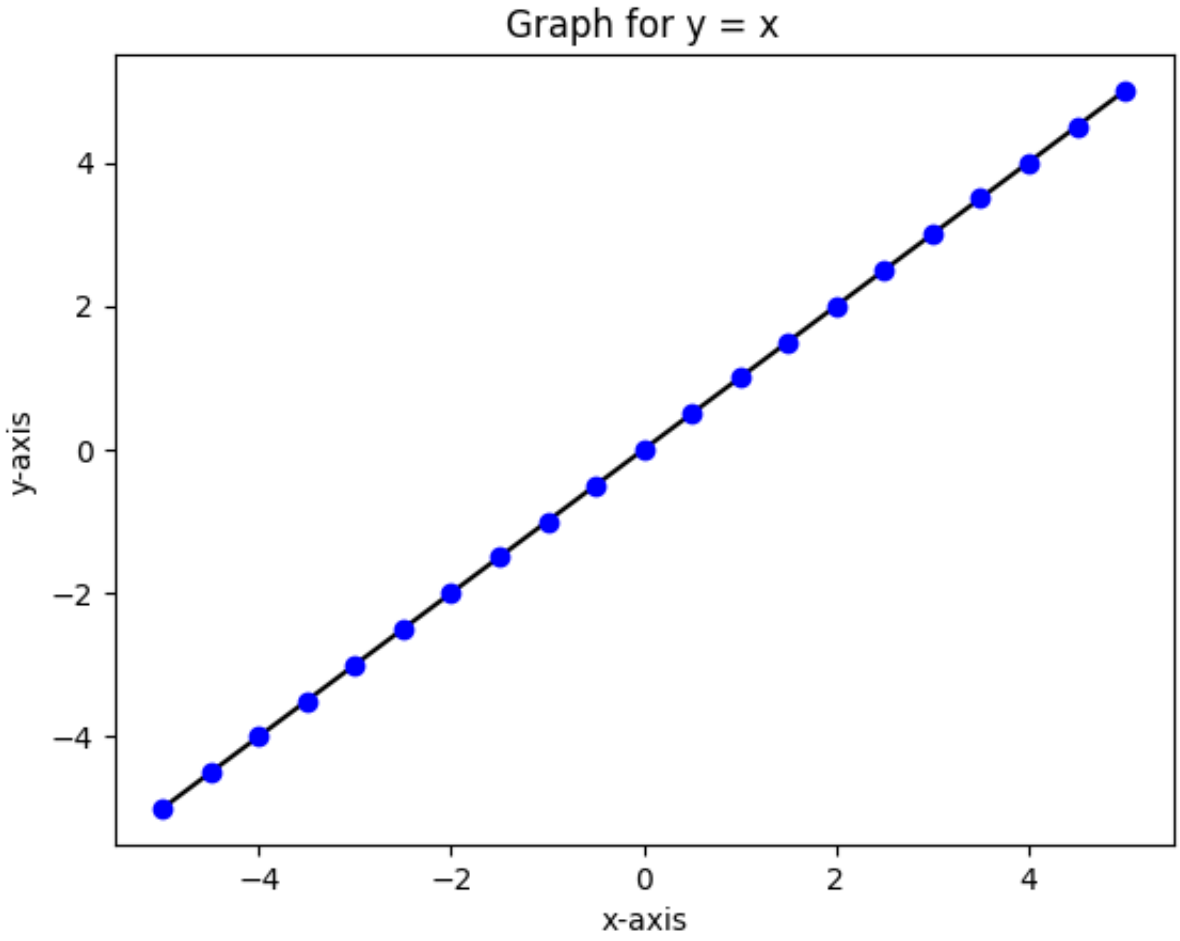
Homework 1 writeups

Problem 1

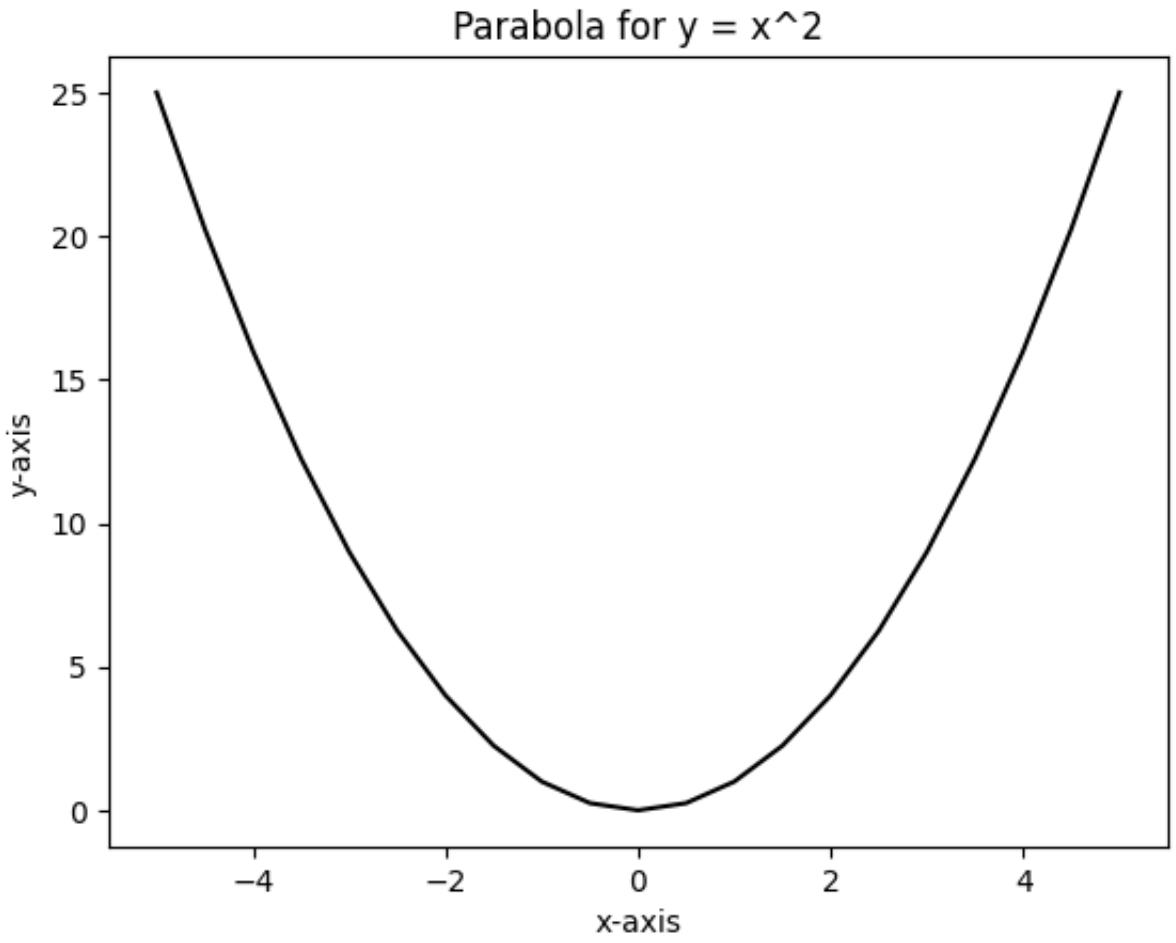
In [ ]:
```
import numpy as np
import matplotlib.pyplot as plt


# First create the array "x" between -5 and 5
x = np.arange(-5, 5+0.5, 0.5)

# Then we want to plot y = x, so we define that
y = x

# Now that we have both arrays plotted we can plot using "plt.plot"
plt.plot(x, y, 'k') # This creates a black line.

# Suppose we also want to highlight a few points, the points at which we hav
# we can do so with blue markers.
plt.plot(x, y, 'bo')

plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.title("Graph for y = x")
plt.show()
```



The blue dots above are solutions that satisfy the equation y = x, hence they are points on the black curve for the equation.

Problem 2

In [ ]:
```
import numpy as np
import matplotlib.pyplot as plt

x = np.arange(-5, 5+0.5, 0.5)

y = x ** 2

plt.plot(x, y, 'k')

plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.title("Parabola for y = x^2")
plt.show()
```


Parabola for y = x^2
y-axis
x-axis
25
20
15
10
5
0
−4
−2
0
2
4