Artificial Neural Network

# Question 1

**Show the output from your program reproducing the AND learning in the final lecture slides, where the weights are outputted at every application of the weight-change rule.**

When we first started our perceptron, we decided upon 6 points that could be separated by the line y = x. These 6 points were as follows:

* ( 6, 9), ( 1, 8), ( -4, 2), ( 1, -1), ( -3, -4), ( 7, 2)

The original graph with points can be found in Appendix A.

Here we can see our perceptron updating the weights in order to create a line which will be similar enough to x = y to still separate out points. The original weights are randomly generated values between 0 and 1:

Text

Description automatically generated

A visual representation of our graph along with 5 lines drawn by our perceptron shows that randomly generated values for the weights will result in the perceptron outputting various different lines which separate our points. Pictured in red is the line from the example above:

Chart

Description automatically generated

# Appendix

### Appendix A

A picture containing diagram

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