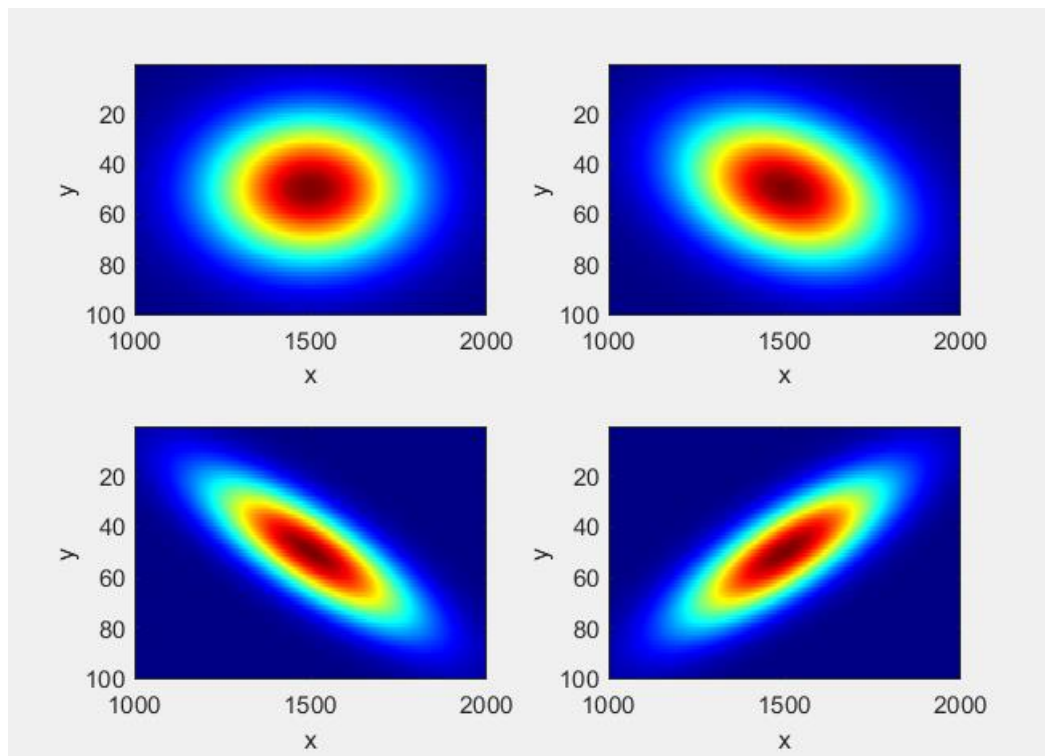


1.(a)



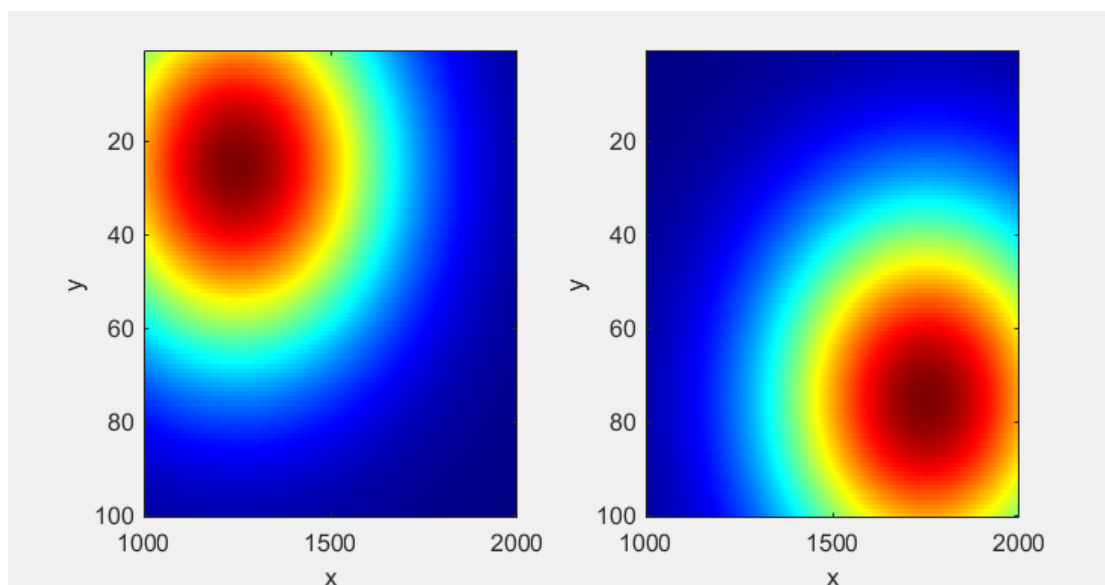
1.(b)

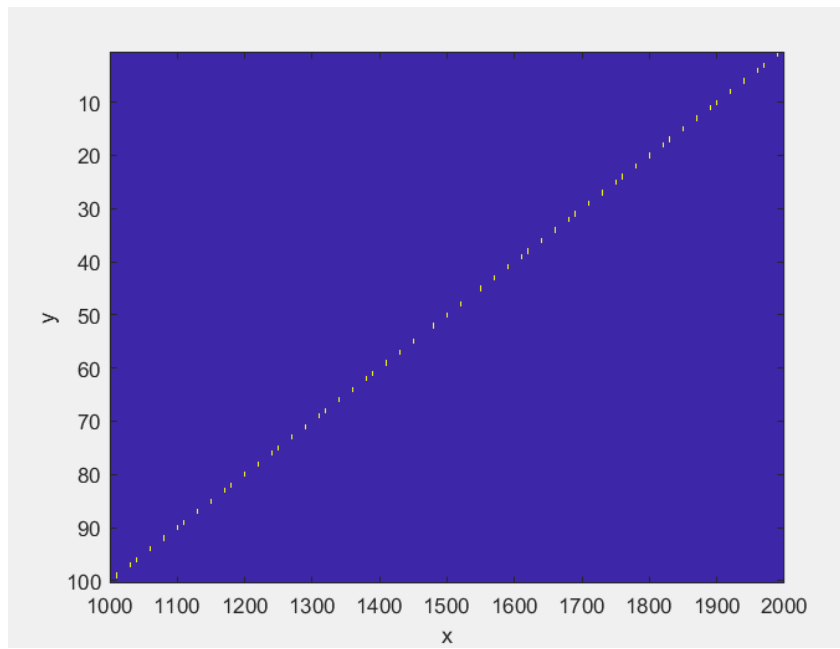
From the plot of distribution 1 and 2 , we found that as the value of correlation higher , the plot will tilt more and become more flat.

From the plot of distribution 3 and 4 , we found that the plot will be symmetrical to y axis as the value of correlation change from positive to negative

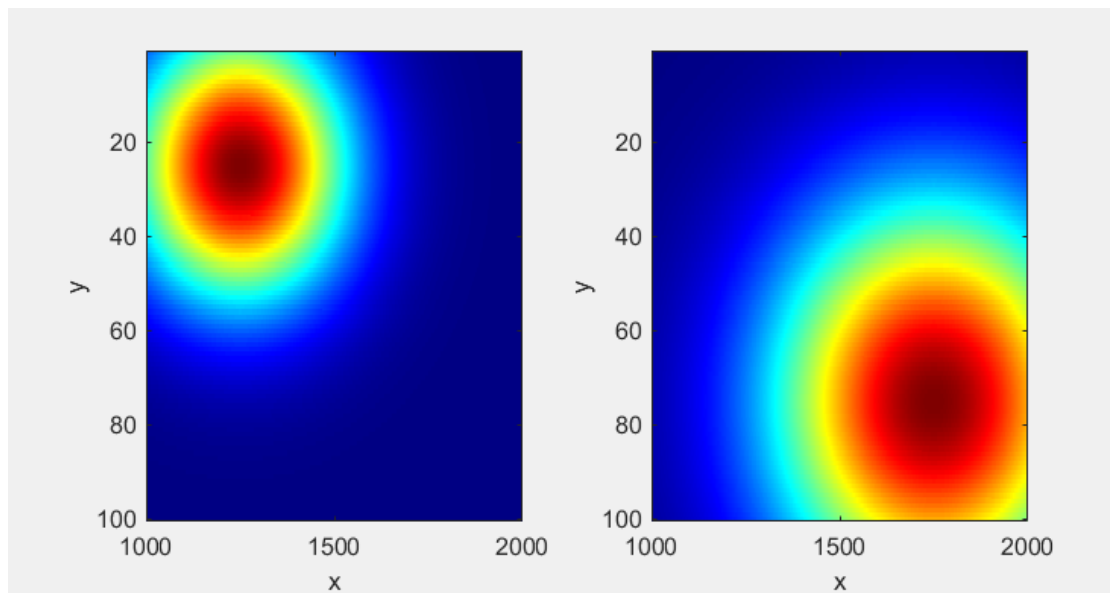
2(a)

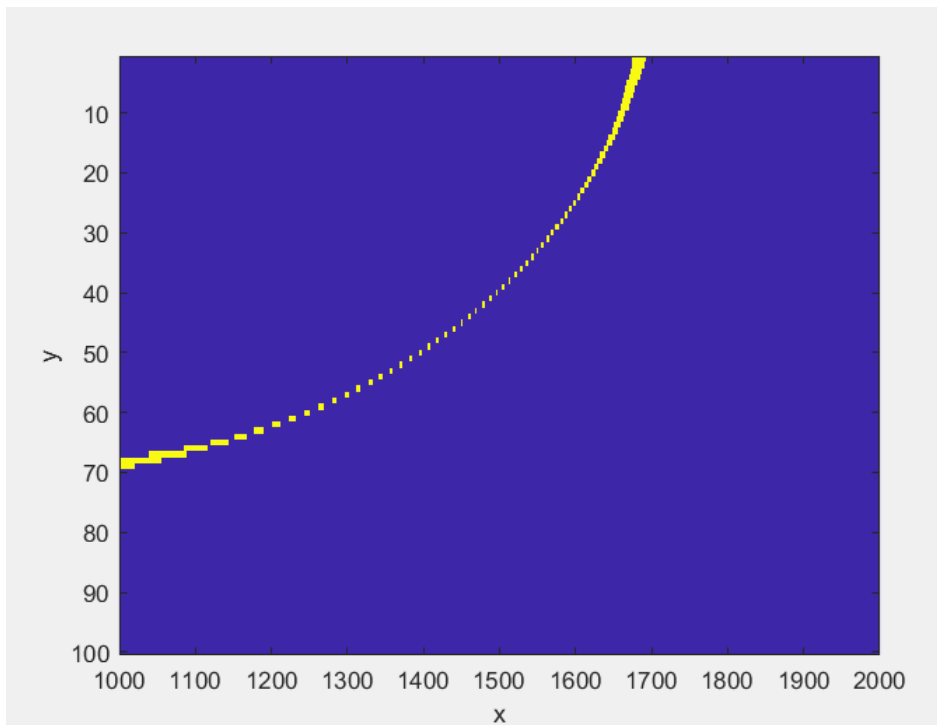
Case1





Case2

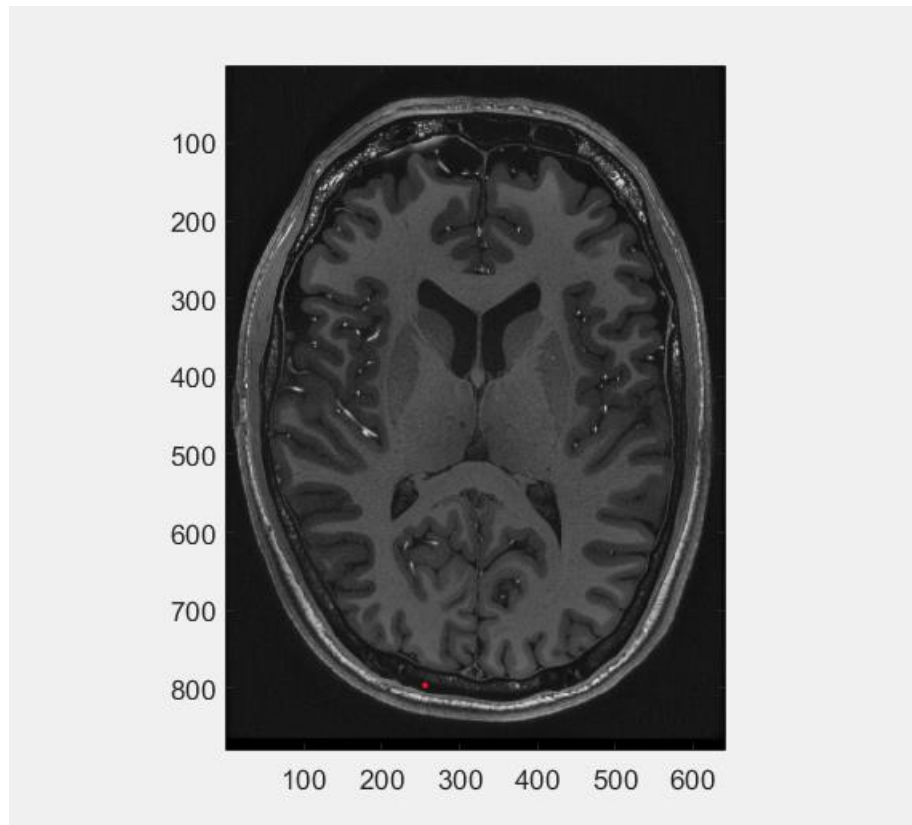




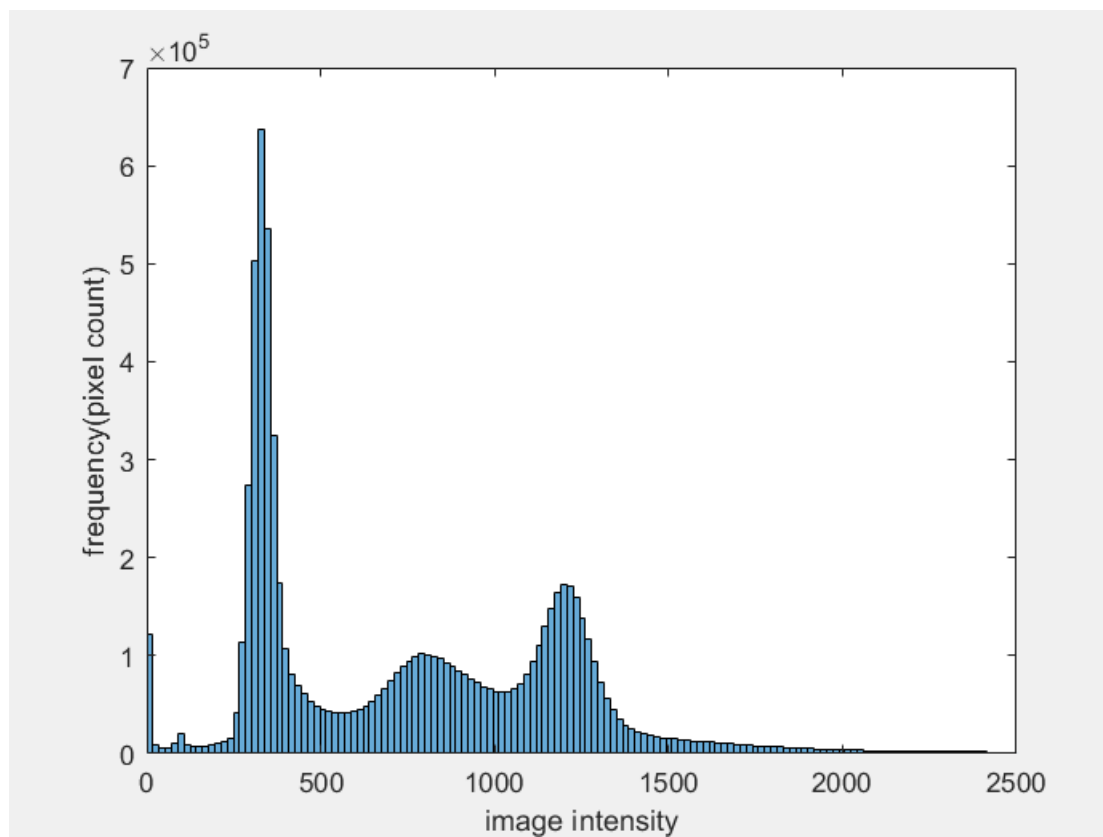
2.(b)

The decision boundary will differ according to the gap of each data ,that is, its sigma .
As the sigma goes lower , the boundary will be close to that side.

3(a)

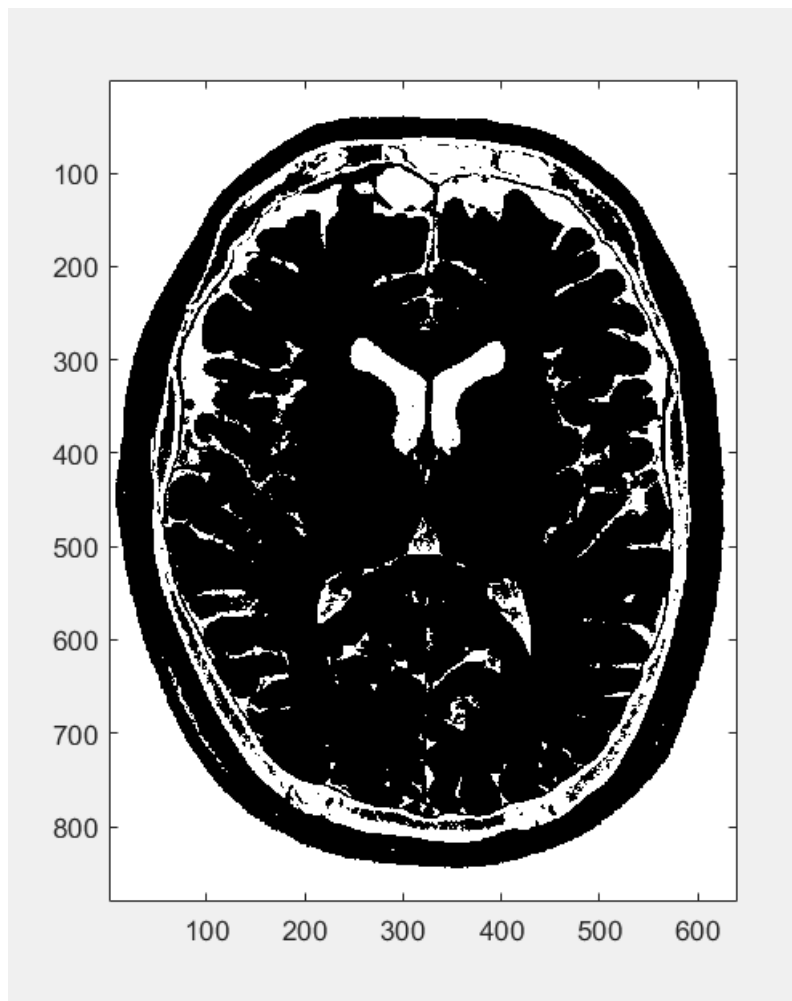


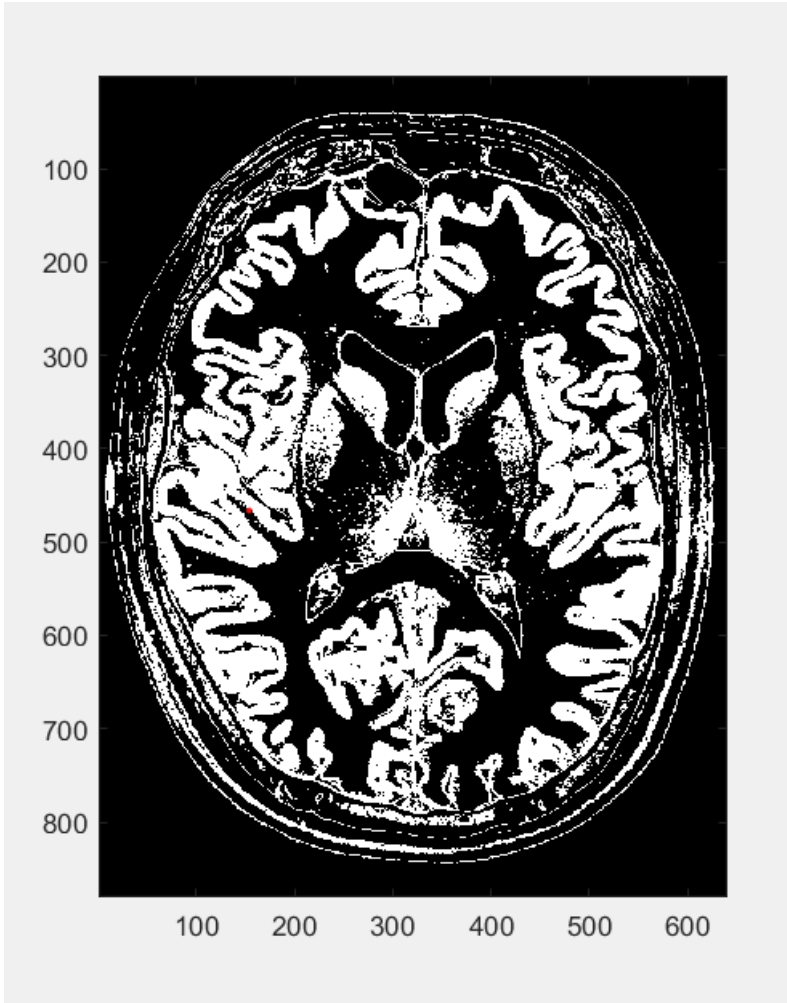
3(b)

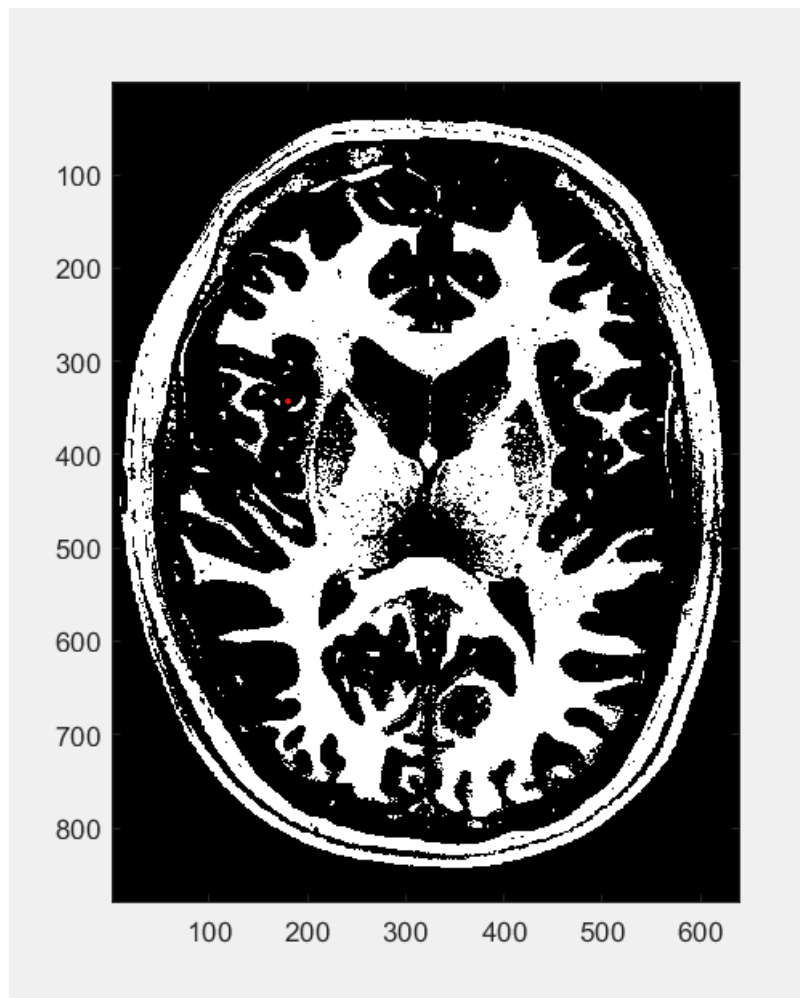


3(c)

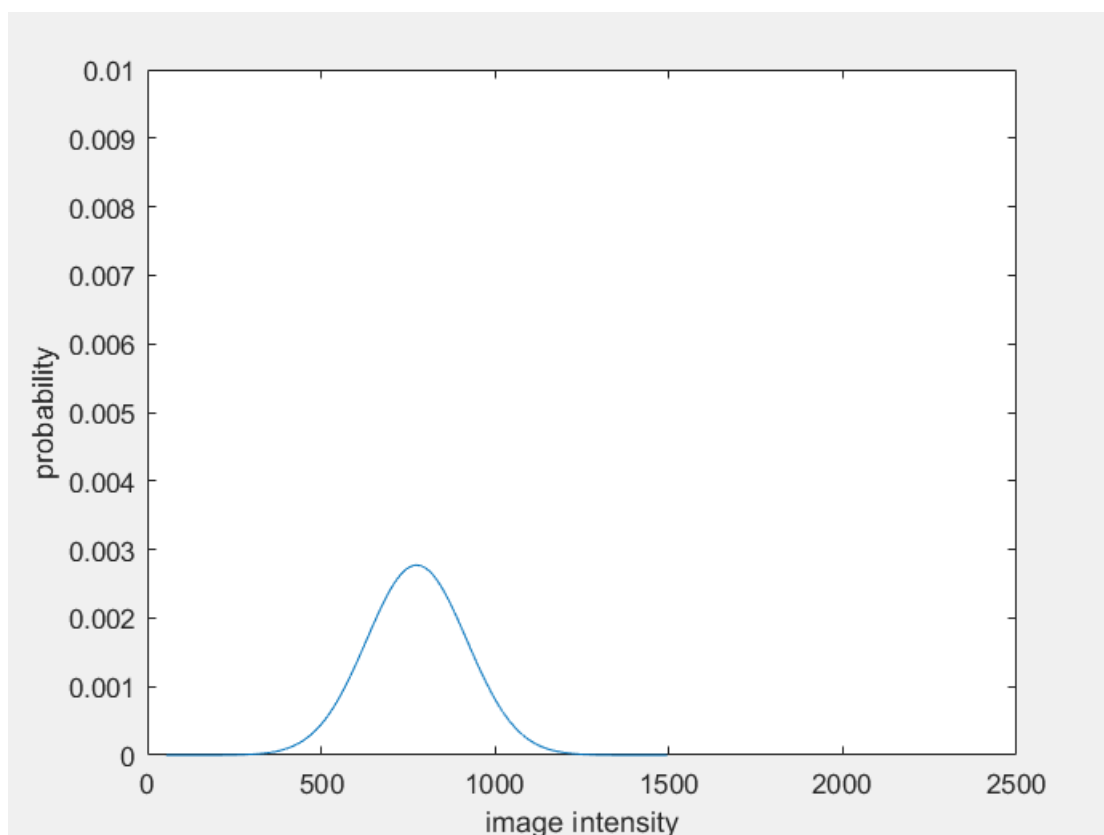
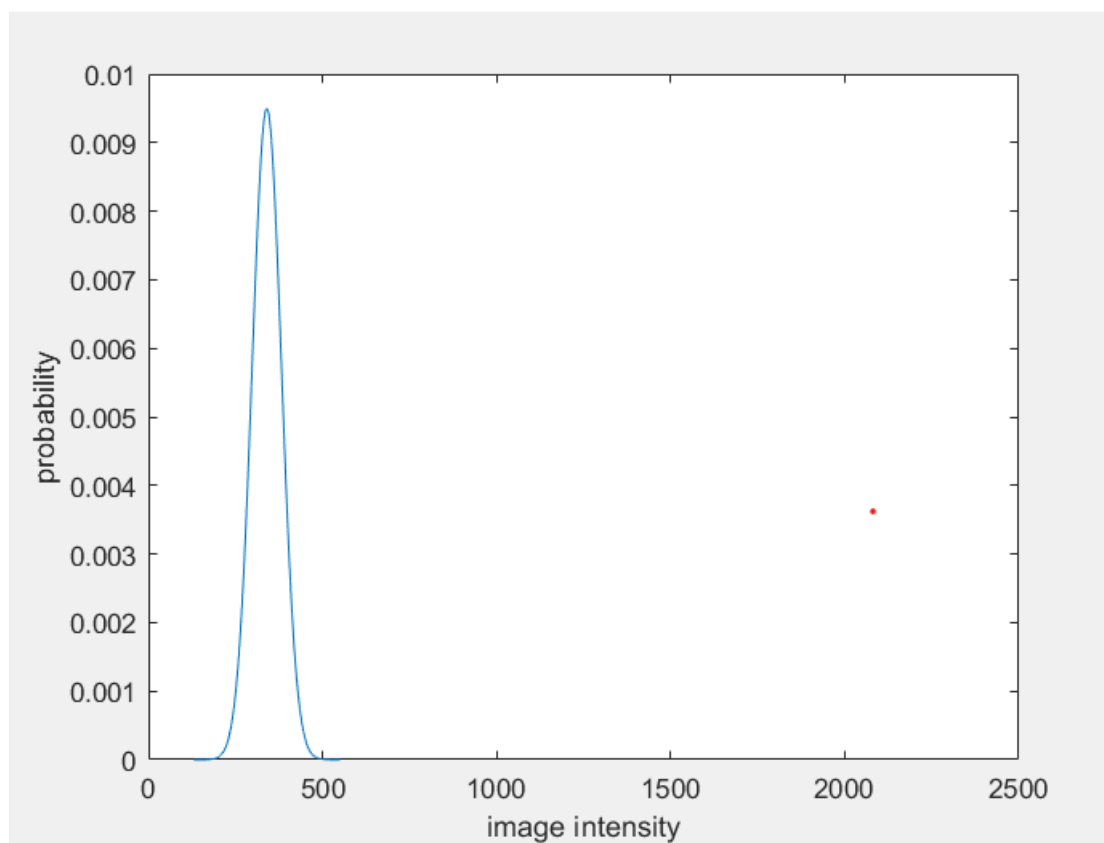
First range = [0 559],second range = [560 1021],third range [1022 end]

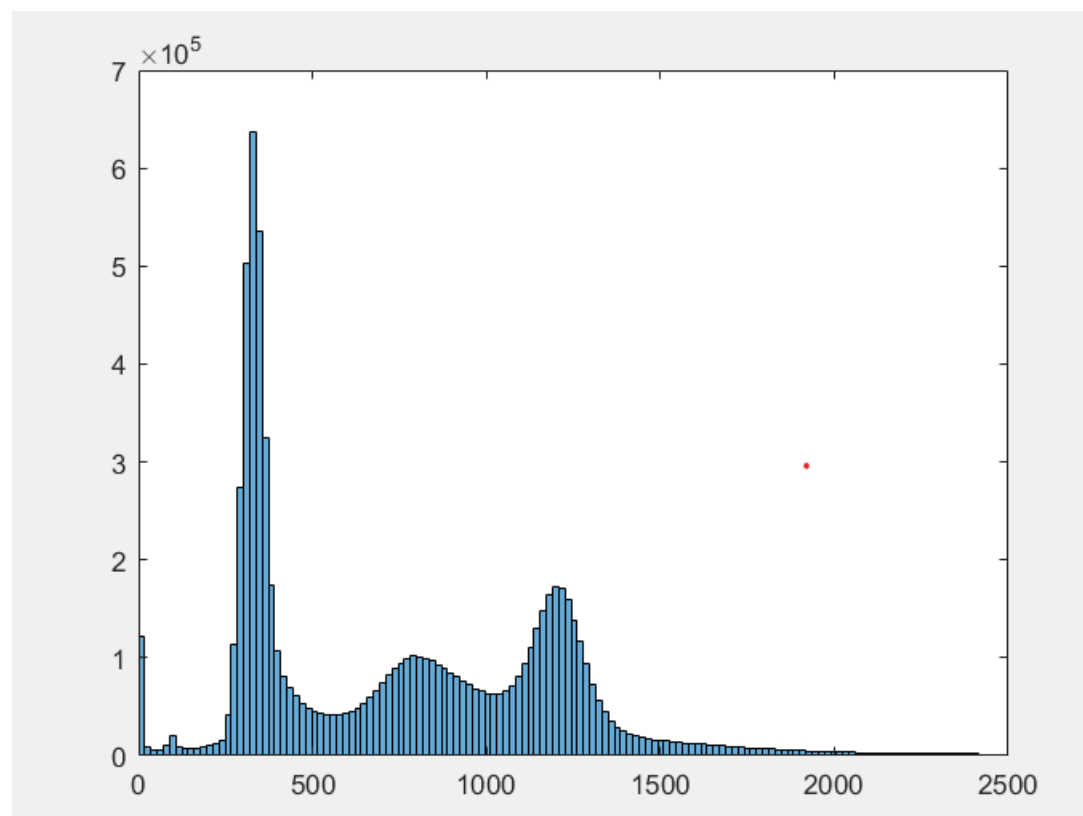
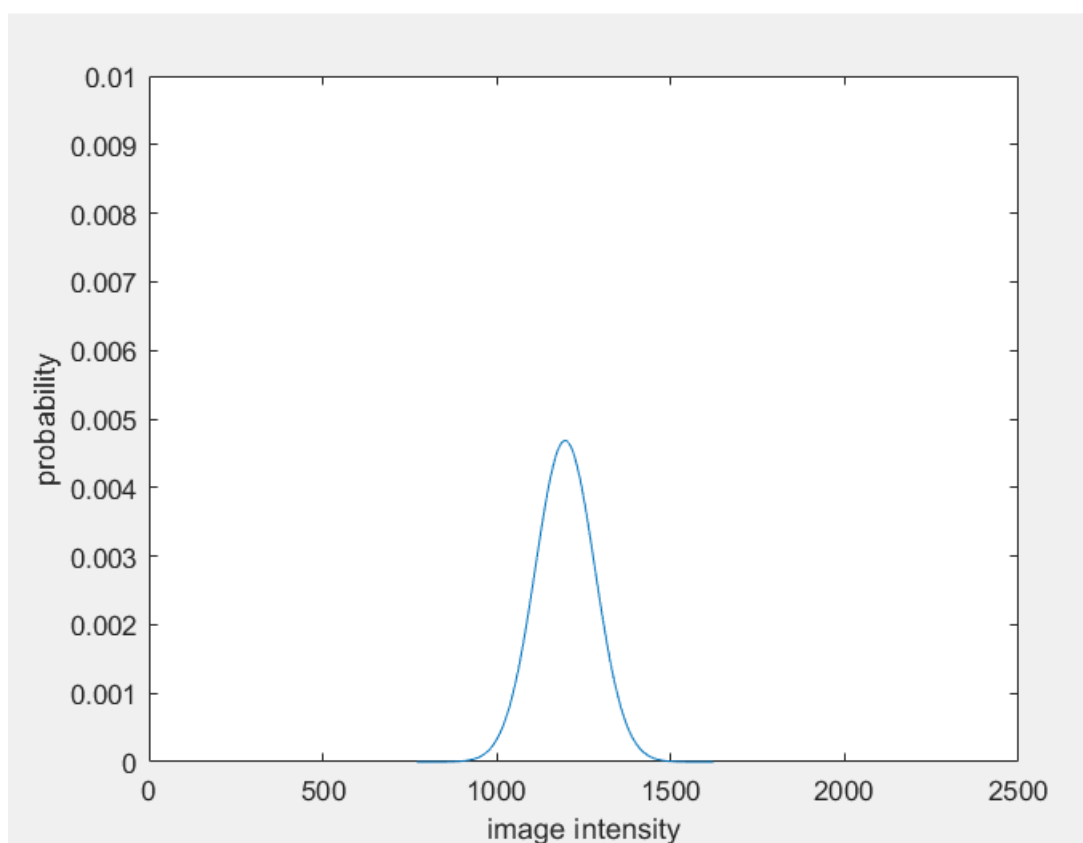


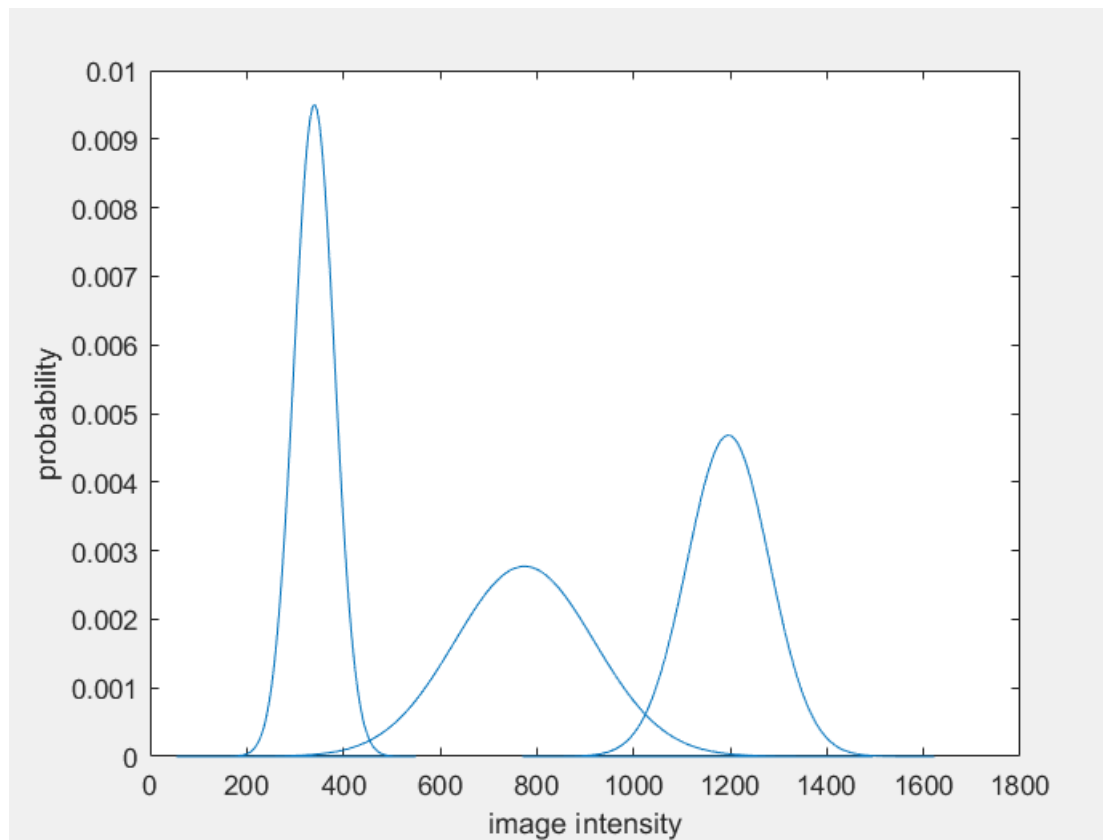




3(d)







they combined distribution looks similar to the histogram.