**Lec10**



Three Gaussian PDFs are shown in the above plot. The probability of each Gaussian PDF is 1/3. The region 1, 2, and 3 has following properties.

1. Gaussian PDF function in Region 1 has G (-3, )
2. Gaussian PDF function in Region 2 has G (0, 1)
3. Gaussian PDF function in Region 3 has G (5, 2)

a) Write Gaussian density function for each region.

b) Find the probability, . Write your answer with Q function only.

The Gaussian density function is defined as



a)

For region 1, it has Gaussian, ,



For region 2, it has Gaussian, ,



For region 3, it has Gaussian, ,



b) Let  and let 

For the region 1, 





For the region 2, 



For the region 3, 



Now total  can be found as









