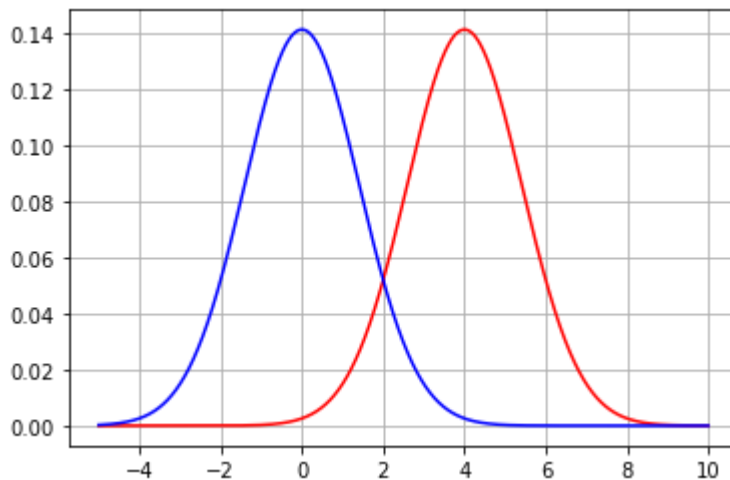```
In [ ]: import matplotlib.pyplot as plt
         import numpy as np
         import math
```

```
In [ ]:  def gaussian(x, mean, sigma_2):
             return (1 / (math.sqrt(2 * math.pi * sigma_2))) * np.exp(-(x - mean)**2 / (2 * sig
```

```
In [ ]:  X=np.arange(-5,10,0.001)
         Y=[]
         Y2=[]
         for x in X:
             Y.append(gaussian(x,4,2)*0.5)
         Y=np.array(Y)
         plt.plot(X,Y,'-',color="red")
         for x in X:
             Y2.append(gaussian(x,0,2)*0.5)
         Y2=np.array(Y2)

         plt.plot(X,Y2,'-',color="blue")
         plt.grid()
         plt.show()
         print("T2) dicision boundary is 2")
```
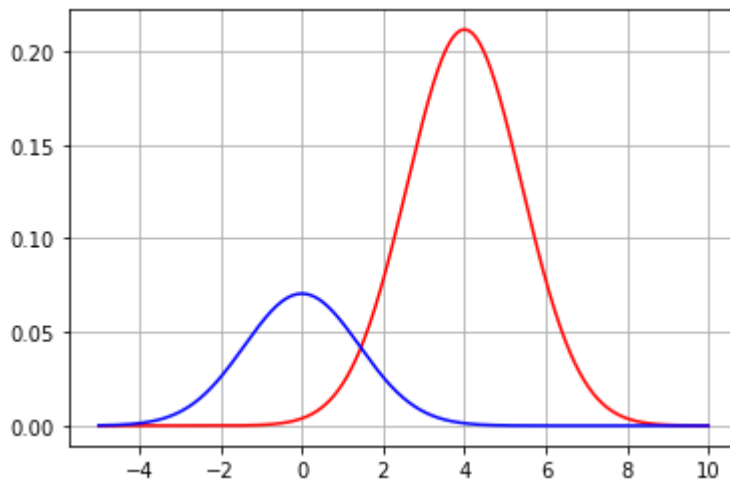

T2) dicision boundary is 2

```
In [ ]:  X=np.arange(-5,10,0.001)
         Y=[]
         Y2=[]
         for x in X:
             Y.append(gaussian(x,4,2)*0.75)
         Y=np.array(Y)
         plt.plot(X,Y,'-',color="red")
         for x in X:
             Y2.append(gaussian(x,0,2)*0.25)
         Y2=np.array(Y2)

         print("T3")
         plt.plot(X,Y2,'-',color="blue")
         plt.grid()
         plt.show()
```

T3

```
In [ ]:  X=np.arange(-10,10,0.001)
         Y=[]
         Y2=[]
         for x in X:
             Y.append(gaussian(x,4,2)*0.5)
         Y=np.array(Y)
         plt.plot(X,Y,'-',color="red")
         for x in X:
             Y2.append(gaussian(x,0,4)*0.5)
         Y2=np.array(Y2)
         print("OT3")
         plt.plot(X,Y2,'-',color="blue")
         plt.grid()
         plt.show()
```

OT3