

In []:

```
import numpy as np
import matplotlib.pyplot as plt
from math import*

plt.figure(figsize=(8,3),dpi=400)

#定义自变量X和函数y
X = np.linspace(0,7,1000)
sigma1,sigma2=0.5,1
mu1,mu2=1.5,3.5
y1=1/np.sqrt(2*pi)/sigma1*np.exp(-0.5*(X-mu1)*(X-mu1)/sigma1/sigma1)
y2=1/np.sqrt(2*pi)/sigma2*np.exp(-0.5*(X-mu2)*(X-mu2)/sigma2/sigma2)

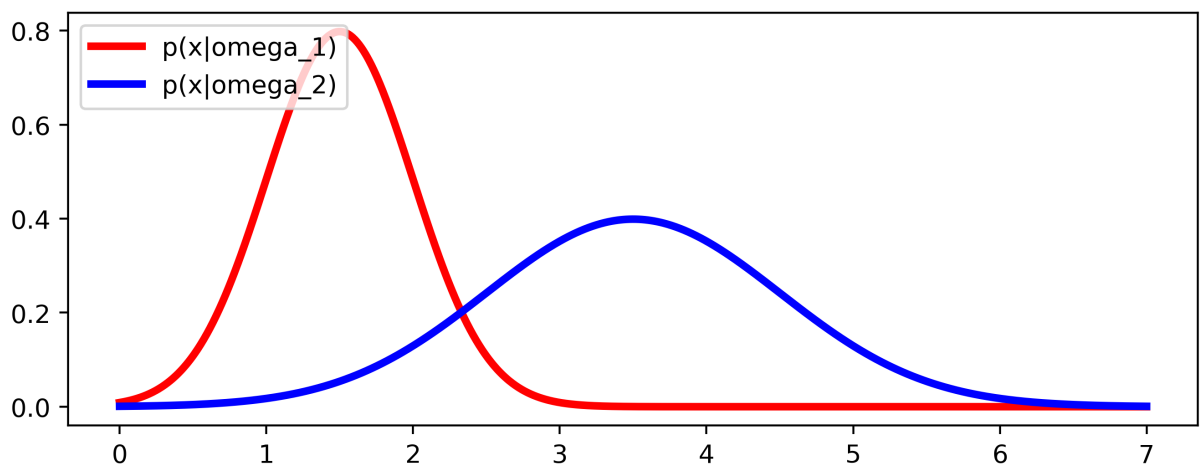
#绘图并设置图例
plt.plot(X,y1,linewidth=3.0,linestyle='-',color='red',label="p(x|omega_1)")
plt.plot(X,y2,linewidth=3.0,linestyle='-',color='blue',label="p(x|omega_2)")
plt.legend(loc='upper left')

#移动坐标轴
'''ax = plt.gca()
ax.spines['right'].set_color('none')
ax.spines['top'].set_color('none')
ax.xaxis.set_ticks_position('bottom')
ax.spines['bottom'].set_position(('data',0))
ax.yaxis.set_ticks_position('left')
ax.spines['left'].set_position(('data',0))'''

'''#设置坐标轴刻度
plt.xticks([-np.pi, -np.pi/2, 0, np.pi/2, np.pi],
           [r'$-\pi$', r'$-\pi/2$', r'$0$', r'$+\pi/2$', r'$+\pi$'])

plt.yticks([-1, 0, +1],
           [r'$-1$', r'$0$', r'$+1$'])'''

plt.show()
```



In []:

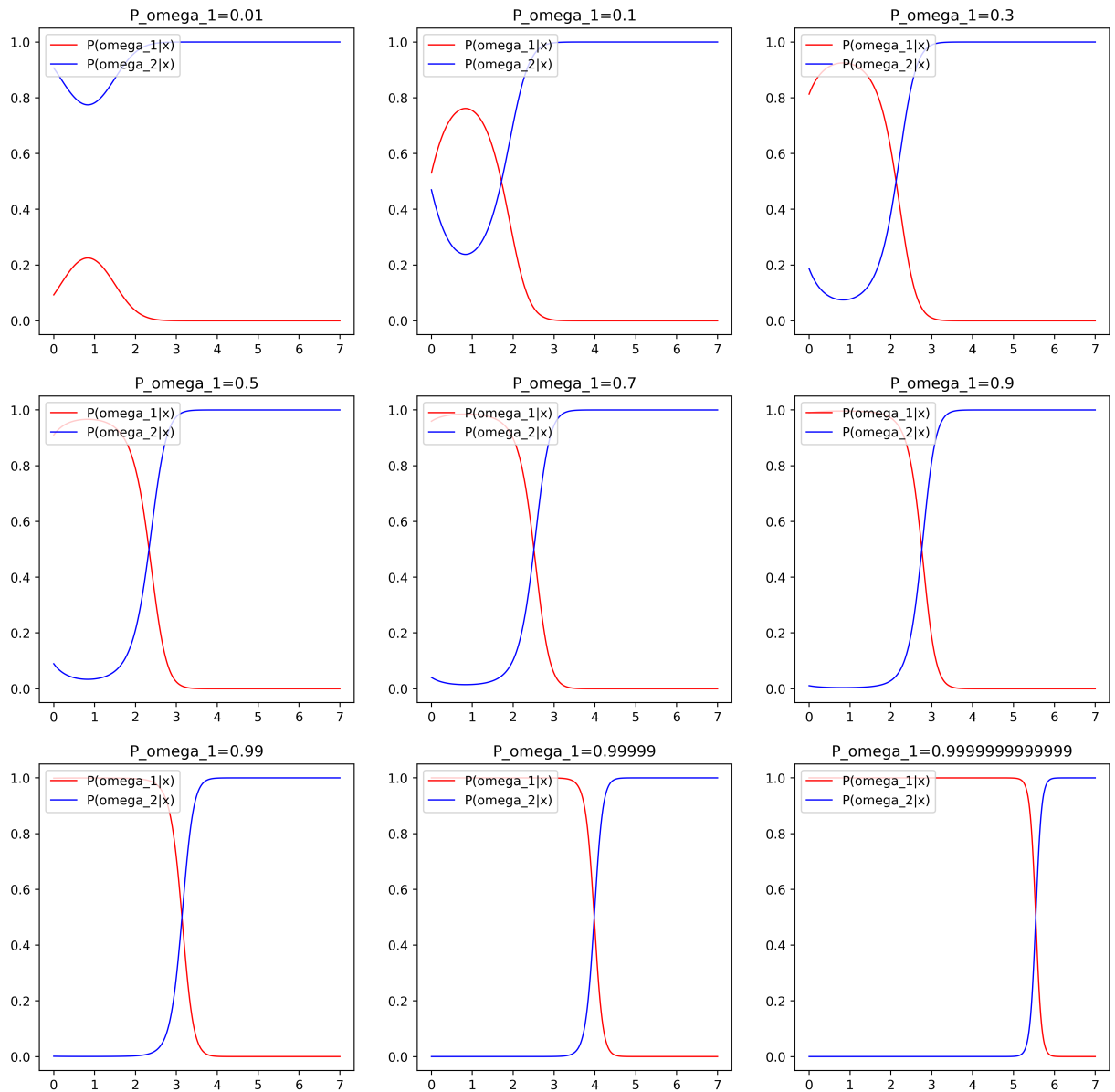
```
plt.figure(figsize=(15,15), dpi=400)
P_omega_1_list=[0.01,0.1,0.3,0.5,0.7,0.9,0.99,0.99999,0.999999999999999]
for P_omega_1 in P_omega_1_list:
    #P_omega_1=0.1
    P_omega_2=1-P_omega_1
    Y_1=y1*P_omega_1/(y1*P_omega_1+y2*P_omega_2)
    Y_2=y2*P_omega_2/(y1*P_omega_1+y2*P_omega_2)

    ax=plt.subplot(3,3,P_omega_1_list.index(P_omega_1)+1)
```

```

ax.set_title(f'P_omega_1={P_omega_1}')
#绘图并设置图例
plt.plot(X,Y_1,linewidth=1,linestyle='-',color='red',label="P(omega_1|x)")
plt.plot(X,Y_2,linewidth=1,linestyle='-',color='blue',label="P(omega_2|x)")
plt.legend(loc='upper left')

```



In []: