[0 1]
[1 0]

$\hat{y}_i = \hat{y}(x_i) = x_i^T \hat{B}$

$d(p,q) = \sqrt{\sum_{i=1}^{n} (q_i - p_i)^2}$

1: 3
2: 2
3: $\sqrt{10}$
4: $\sqrt{5}$
5: $\sqrt{2}$
6: $\sqrt{3}$

$$\frac{(\mu_1-\mu_2)(\mu_1+\mu_2)}{2(\mu_1-\mu_2)} + \frac{\sigma^2 \log(\pi_2/\pi_1)}{(\mu_1-\mu_2)}$$

$$x > \frac{(\mu_1+\mu_2)}{2} + \frac{\sigma^2 \log(\pi_2/\pi_1)}{(\mu_1-\mu_2)}$$

if $\pi_2 > \pi_1$ $\log(\pi_2/\pi_1)$ is postive and negative if $\pi_2 < \pi_1$

if the means are sufficiently diff. the right term becomes small. Likewise if the variance is small, relative to the seperation of the means.