Problem 11.4

(1).

$$R_1 : \frac{f_1(x)}{f_2(x)} \geq \frac{c(1|2)p_2}{c(2|1)p_1} = 0.4$$
$$R_2 : \frac{f_1(x)}{f_2(x)} < \frac{c(1|2)p_2}{c(2|1)p_1} = 0.4$$

(2).

$$\frac{f_1(x)}{f_2(x)} = 0.6 \geq 0.4$$

故此新项属于 π_1.

Problem 11.14

在例 11.3 中，$\hat{a} = (37.6, -28.9)^T, \hat{m} = \hat{a}\frac{1}{2}(\bar{y_1} + \bar{y_2}) = -4.61$.

根据 (11-21),

$$\hat{a}^* = \frac{\hat{a}}{||\hat{a}||} = (0.79, -0.61)^T$$
$$\hat{m}^* = \frac{\hat{m}}{||\hat{a}||} = -0.10$$

因 $x_0^T\hat{a}^* = -0.14 < \hat{m}^*$，将 x_0 分到 π_2.

根据 (11-22),

$$\hat{a}^* = \frac{\hat{a}}{\hat{a}_1} = (1, -0.77)^T$$
$$\hat{m}^* = \frac{\hat{m}}{\hat{a}_1} = -0.12$$

因 $x_0^T\hat{a}^* = -0.18 < \hat{m}^*$，将 x_0 分到 π_2.

结果与例 11.3 中刻度变换之前的一致。应该是一致的，因为不等式两边均乘以相同的变换系数。