

2.(b) Da questão 1 temos

$$w_1 = 0.5, w_2 = 0.5, w_3 = 0.5, w_4 = 0.75$$

$$Y = \frac{\sum_{k=1}^4 w_k \cdot Y^k}{\sum_{k=1}^4 w_k} = \frac{0.5(15+15+30) + 0.75 \cdot 45}{3 \cdot 0.5 + 0.75}$$

$$= \frac{63.75}{2.25} = 28.3$$

$$(c) w_k = \left[\bigvee_{x_1 \in X_1} \mu_{A_1^k \cap \tilde{C}_1}(x_1) \right] \cdot \left[\bigvee_{x_2 \in X_2} \mu_{A_2^k \cap \tilde{C}_2}(x_2) \right]$$

$$\tilde{C}_1 = 0.5/2 + 1/3 + 0.5/4, \tilde{C}_2 = 0.5/1 + 1/2 + 0.5/3$$

$$w_1 = \left[\bigvee_{x_1 \in X_1} \mu_{N \cap \tilde{C}_1}(x_1) \right] \cdot \left[\bigvee_{x_2 \in X_2} \mu_{F \cap \tilde{C}_2}(x_2) \right] = 0.5 \cdot 0.75 = 0.375$$

$$w_2 = \left[\bigvee_{x_1 \in X_1} \mu_{N \cap \tilde{C}_1}(x_1) \right] \cdot \left[\bigvee_{x_2 \in X_2} \mu_{D \cap \tilde{C}_2}(x_2) \right] = 0.5 \cdot 0.5 = 0.25$$

$$w_3 = \left[\bigvee_{x_1 \in X_1} \mu_{G \cap \tilde{C}_1}(x_1) \right] \cdot \left[\bigvee_{x_2 \in X_2} \mu_{F \cap \tilde{C}_2}(x_2) \right] = 0.5 \cdot 0.75 = 0.375$$

$$w_4 = \left[\bigvee_{x_1 \in X_1} \mu_{G \cap \tilde{C}_1}(x_1) \right] \cdot \left[\bigvee_{x_2 \in X_2} \mu_{D \cap \tilde{C}_2}(x_2) \right] = 0.5 \cdot 0.5 = 0.25$$

$$Y = \frac{0.375 \cdot 15 + 0.25 \cdot 15 + 0.375 \cdot 30 + 0.25 \cdot 45}{2 \cdot 0.25 + 2 \cdot 0.375} = \frac{31.875}{1.25} = 25.5$$