

$$P(\beta, x) + P(\alpha, \delta) - P(\beta, \delta) - P(\alpha, x) \geq 0$$

$$\beta > \alpha, \delta > x$$

$$P(w_m, w_n) = c(w_m - w_n)^2$$

$$c(\beta - x)^2 + c(\alpha - \delta)^2 - c(\beta - \delta)^2 - c(\alpha - x)^2 \geq 0$$

$$(\beta^2 - 2\beta x + x^2) + (\alpha^2 - 2\alpha\delta + \delta^2) - (\beta^2 - 2\beta\delta + \delta^2) - (\alpha^2 - 2\alpha x + x^2) \geq 0$$

$$-2\beta x - 2\alpha\delta + 2\beta\delta + 2\alpha x \geq 0$$

$$\beta\delta + \alpha x \geq \beta x + \alpha\delta$$

$$\beta > \alpha \Rightarrow \beta = \alpha + i, i > 0$$

$$\delta > x \Rightarrow \delta = x + j, j > 0$$

~~(\alpha + i)(x + j) + \alpha x \geq (\alpha + i)x + \alpha(x + j)~~

$$(\alpha + i)(x + j) + \alpha x \geq (\alpha + i)x + \alpha(x + j)$$

$$\cancel{\alpha x} + \cancel{\alpha j} + \cancel{x i} + i j + \alpha x \geq \cancel{\alpha x} + \cancel{x i} + \cancel{\alpha x} + \alpha j$$

$$ij \geq 0$$