

$$a) (1 - \hat{p}_i) \times 0 + \hat{p}_i \times 1 = \hat{p}_i$$

$$b) (1 - \hat{p}_i) \times 1 + \hat{p}_i \times 0 = 1 - \hat{p}_i$$

$$c) \hat{p}_i \geq (1 - \hat{p}_i)$$

$$2\hat{p}_i \geq 1 \rightarrow \hat{p}_i \geq 1/2$$

$$c = 1/2$$