

$$\beta = 0.99$$

$$\delta = 0.95$$

$$PPV = P(\theta = 1 | \gamma_1 = 1)$$

STAT 206
1 Feb 24

DD ①
0 H

$$= \frac{\alpha\beta}{\alpha\beta + (1-\alpha)(1-\delta)}$$

$$NPV =$$

$$P(\theta = 0 | \gamma_1 = 0) = \frac{(1-\alpha)\delta}{\alpha(1-\beta) + (1-\alpha)\delta}$$

Concave

$$FPR = \frac{FP}{FP + TN}$$

$$FNR = \frac{FN}{FN + TP}$$

$$= \frac{(1-\alpha)(1-\delta)}{1-\alpha}$$

$$= 1-\delta$$

$$= \frac{\alpha(1-\beta)}{\alpha} = 1-\beta$$