GENERALIZED LINEAR MODEL

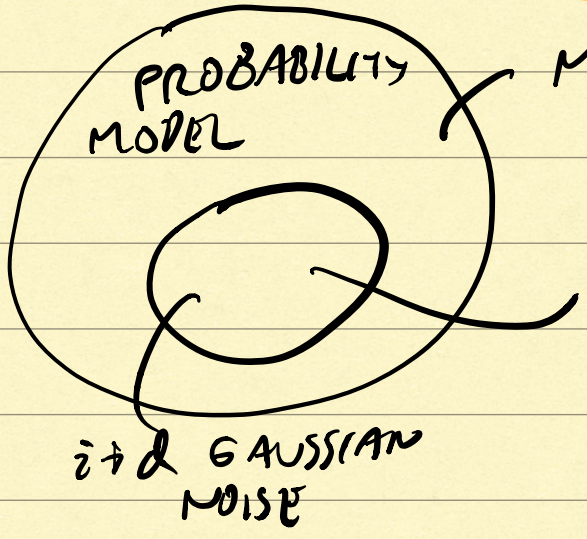
PATIENT DIABETES (YES/NO)

→ GLUCOSE LEVEL X

→ INSULIN LEVEL Y

p_i – PROBABILITY iTH PATIENT HAS DIABETES

$$p_i = \frac{e^{\beta_0 + \beta_1 X + \beta_2 Y}}{1 + e^{\beta_0 + \beta_1 X + \beta_2 Y}}$$



PATIENT #	DIAGNOSIS	FACTORS	
1	Y	X_1	Y_1
2	N	X_2	Y_2

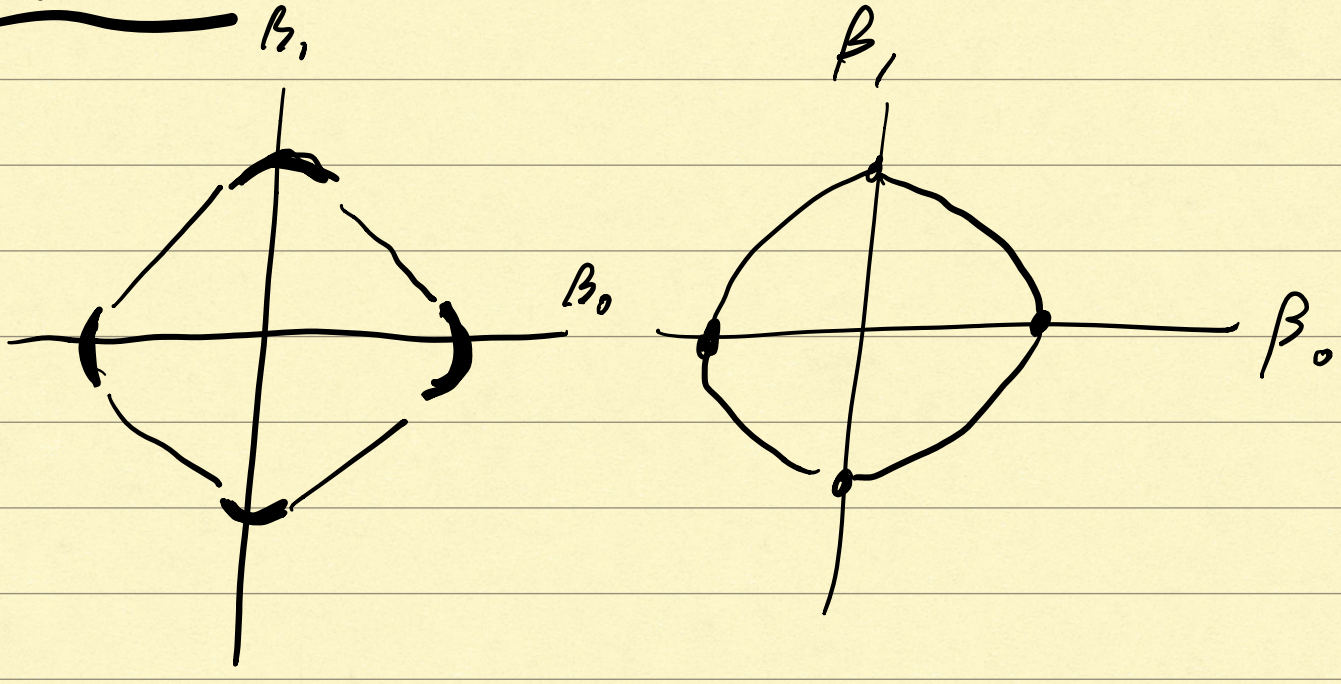
3	Y	X_3	Y_3
4	Y	X_4	Y_4

$$L = p_1 \cdot (1 - p_2) \cdot p_3 \cdot p_4$$

$$\log\left(\underbrace{\frac{p_i}{1-p_i}}_{\text{ODDS}}\right)_{\text{LOG-ODDS}} = \beta_0 + \beta_1 X + \beta_2 Y$$

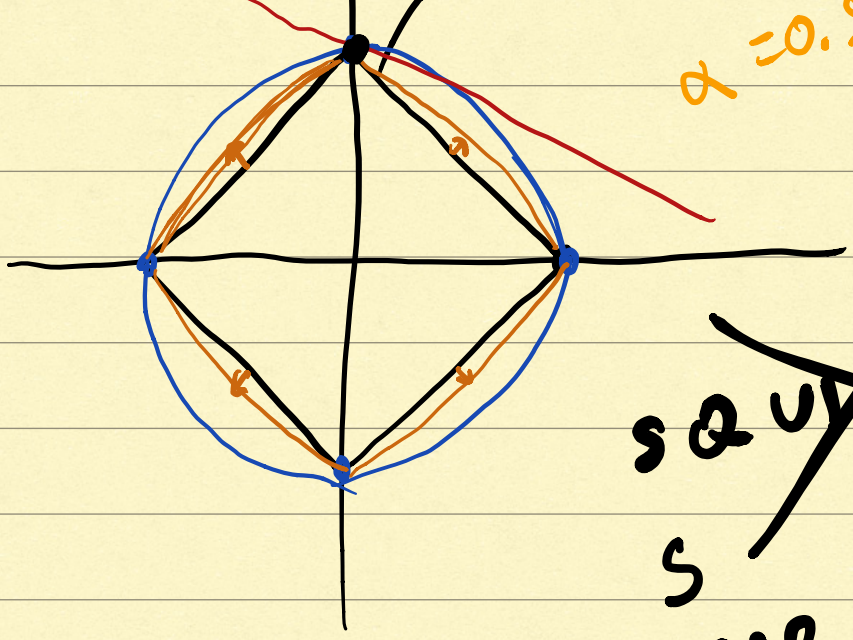
PS 10

?



$\alpha = 0$

$\alpha = 1.00$



~~SQUARCLE~~

SQUIRCLE ✓