Stat 550 Virtual Whiteboard
Last of Chapter 3

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$$\widehat{R(f')} = \sum \frac{1}{n^2h^3}\left(\nu_{k+1} - \nu_k\right)^2$$

$$\nu_{k+1}^2 + \nu_k^2 - 2\nu_{k+1}\nu_k$$

$EX^2 = \mathrm{Var}X + \mu_x^2$

$EXY = \mathrm{Cov}(X,Y) + \mu_x\mu_y$

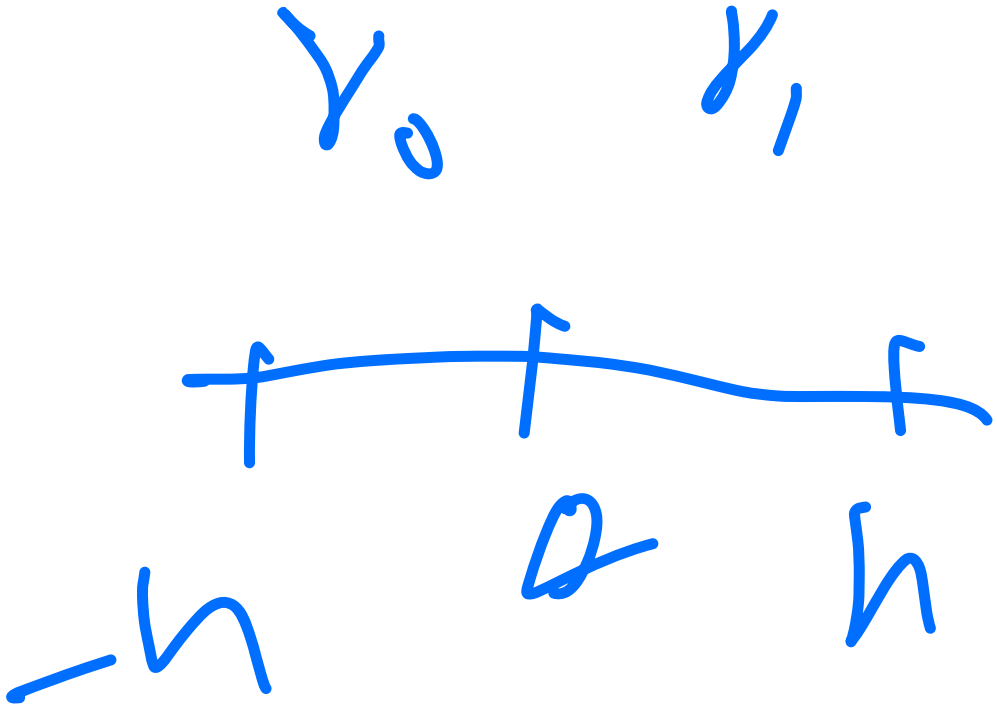
$$E[\;] = \frac{1}{n^2h^3}\sum_k \Big\{ \left[np_{k+1}(1-p_{k+1}) + (np_{k+1})^2\right] + \left[np_k(1-p_k) + (np_k)^2\right] - 2\left[-np_{k+1}p_k + (np_k)(np_{k+1})\right] \Big\}$$

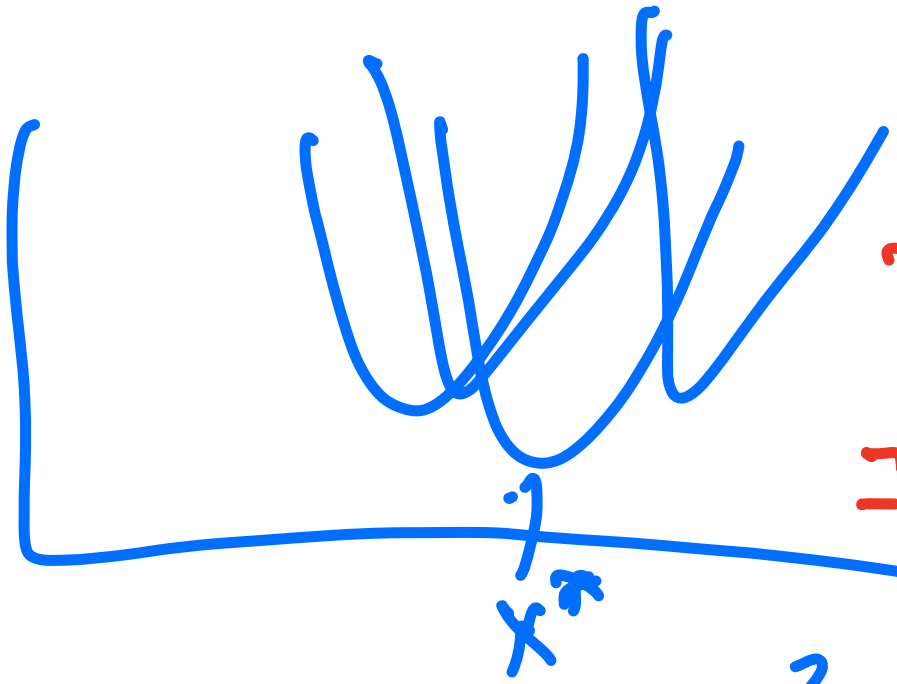
$$= \frac{1}{nh^3}\Big\{ \sum_k (p_{k+1} + p_k) + \sum_k \left[-p_{k+1}^2 - p_k^2 + 2p_{k+1}p_k\right] + n\sum_k \left\{p_{k+1}^2 + p_k^2 - 2p_{k+1}p_k\right\} \Big\}$$

$$= \frac{2}{nh^3} + n\sum_k (p_{k+1} - p_k)^2 - \sum_k (p_{k+1} - p_k)^2$$

exact

[illegible]!!


γ_0
γ_1
$-h$
0
h



$$x^* = \frac{-b(1+\sigma_b z_b)}{c(1+\sigma_c z_c)}$$

$$= -\frac{b}{c}\left(\frac{1+\sigma_b z_b}{1+\sigma_c z_c}\right)$$

$$a + bx + cx^2$$

$$a + b(1+\sigma_b z_b)x + \frac{1}{2}c(1+\sigma_c z_c)x^2$$

$$\frac{d}{dx} = 0 \quad b(1+\sigma_b z_b) + c(1+\sigma_c z_c)x = 0$$