

# Homework 4 Answers

BSTA 550

There are answers at the back of the book!! Selected answers (or hints) not provided at the end the book:

- Chapter 9

- NTB # 1 Partial answers:

- \* (g)  $p_{X|Y}(X = \text{high school} | Y = \text{no smoking at all}) = 0.476$

- \* (h)  $p_{Y|X}(Y = \text{no smoking at all} | X = \text{high school}) = 0.200$

- NTB # 2

- \* (a)  $p_{X,Y}(x, y) = [0.99^{x-1}0.01][0.97^{y-1}0.03]$  for  $x, y = 0, 1, 2, \dots$

$$F_{X,Y}(x, y) = \begin{cases} (1-0.99^x)(1-0.97^y) & \text{for } x \geq 1 \text{ \& } y \geq 1 \\ 0 & \text{if } x < 1 \text{ or } y < 1 \text{ or both} \end{cases}$$

- \* (b)

**NOTE**

$$\sum_{k=1}^n r^{k-1} = \frac{(1-r^n)}{1-r}$$

And hint:

$$p_{Y|X}(y|x) = p_Y(y) = 0.97^{y-1}(0.03)$$

for  $y=1, 2, 3, \dots$

\* (c)