

STAT 270 Lecture 14
Fall 2015
9 October 2015

- We finished slide 21 of ‘Discrete Distributions’.
- In the text we have finished 4.2.
- Problems from text: 4.03, 4.11, 4.16, 4.21, 4.25, 4.38, 4.40.
- Handwritten slides.
- Key jargon, ideas:
 - I described the ‘law of the unconscious statistician. If X is a discrete rv and $Y = h(X)$ for some function h then

$$E(Y) = \sum_y yP(Y = y) = \sum_x h(x)P(X = x).$$

- Expected value of a constant is the constant.
- “E” is linear

$$E(aX + bY) = aE(X) + bE(Y).$$

- I defined the variance of X by

$$\text{Var}(X) = E[(X - \mu)^2] = E(X^2) - E^2(X).$$

- The SD of X is the square root of the variance.
- I told you

$$\text{Var}(aX + b) = a^2\text{Var}(X)$$