

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering and Computer Science
6.262—Discrete Stochastic Processes

Problem Set # 4

Issued: Wednesday, February 25, 2009

Due: Wednesday, March 4, 2009

Reading Assignment: Chapter 3 of the class notes

1. Complete parts e), f), and g) from problem D of problem set C. These are not at all difficult if you take the proper approach, so if they become messy, think again.
2. Exercise 2.17 of the class notes.
3. Exercise 2.20 of the class notes.
4. Exercise 3.1 of the class notes. There was a typo in the hint for part c). It should read: Hint: *Lower* bound each X_i by a binary rv Y_i , *i.e.*, $X_i(\omega) \geq Y_i(\omega)$ for each sample point ω . Also show that this implies that $F_{X_i}(x_i) \leq F_{Y_i}(y_i)$. Be sure you understand this strange reversal of inequality signs.
5. Exercise 3.3 of the class notes.
6. Exercise 3.6 of the class notes.