

Problem Set #1
(Due Tuesday, February 3 at beginning of lecture)

Economics 310

Spring 2009

1. Suppose two fair (six-sided) dice are tossed.
 - (a) What is the probability of getting a double six?
 - (b) What is the probability of not getting a double six?
 - (c) What is the smallest number of times to throw the two dice for which the probability of getting at least one double six exceeds 0.5?
2. VS Chap. 2, Exercise 2
3. VS Chap. 2, Exercise 4
Note: Part f) of this problem has a typo. It should read “The probability that a customer who did *not* see the add bought a board.”
4. VS Chap. 2, Exercise 5
5. VS Chap. 2, Exercise 8
6. For each of the following statements, if the statement is true, prove it. If the statement is false, provide a counterexample. You may assume that $P(B) > 0$ and $P(B^c) > 0$.
 - (a) $P(A|B) + P(A^c|B) = 1$
 - (b) $P(A|B) + P(A|B^c) = 1$
 - (c) $P(C \cup D|B) = P(C|B) + P(D|B) - P(C \cap D|B)$