STAT 230 Test #1 September 27, 2007 3:30 - 4:15 pm

Name: _____ I.D. No.: _____

Please circle your section and Instructor:

1. Chisholm (1:30 - 2:20) **2. Chisholm** (11:30-12:2)

3. Chenouri (10:30-11:20) **4. Zhou** (12:30-01:20)

1. When $P(A) = 1/3$, $P(B) = 1/2$, $P(A \cup B) = 3/4$,

[2] (a) Calculate $P(AB)$

[3] (b) Calculate $P(\overline{A} \cup \overline{B})$

[3] (c) Calculate $P(A\,\overline{B})$

[2] (a) Are A and B independent? Why?

2. A fair die is thrown twice. A is the event "sum of the throws equals 4", and B is "at least one of the throws is a 3". Calculate

[3] (a) $P(A \mid B)$ (Show your work!)

[3] (b) Are A and B independent? Why?

3. Suppose four individuals get on an elevator at the first floor of MC building. There are six floors (numbered $1, 2, \ldots, 6$) where passengers may get off. Assume passengers are each equally likely to get off at any floor. What is the probability

[3] (a) they all get off at different floors?

[3] (b) at least one individual gets off at floor 4?

[4] (c) two passengers get off at one floor and the other two passengers at another floor?