

Math 210 – Topics in Finite Math
Fall 2007 – First Midterm

Name: _____

TA: _____

VERSION B

- (a) The exam has 5 problems.
- (b) Show your work for every problem. Answers without justification will not receive credit.
- (c) Calculators are not allowed.
- (d) There is a blank page at the end of the exam for if you need it.

Problem	Points	Score
1	20	
2	20	
3	20	
4	20	
5	20	
Total	100	

3. (20 points) We throw 3 fair dice. What is the chance that we throw exactly one *two* and exactly one *three*?

4. (20 points) A sample space is partitioned into sets A_1 , A_2 and A_3 , with $\Pr[A_1] = 0.5$ and $\Pr[A_2] = 0.3$. The event B satisfies $\Pr[B] = 0.6$ and $\Pr[B \cap (A_2 \cup A_3)] = 0.3$. Are the events A_1 and B independent?

5. An urn contains 7 balls, 2 green balls and 5 red balls. We draw one ball from the urn and keep it in our left hand, and then draw another ball with our right hand.
- (a) (10 points) What is the chance that the two drawn balls have different colors?

- (b) (10 points) If the ball in our right hand is red, what is the chance that the ball in our left hand is red as well?