

MATH/STAT 414

Homework 1

Due 1.21.2011

1. Suppose that an urn contains 3 white, 1 orange, and 4 green marbles.
 - (a) Suppose you reach in and draw two marbles from the urn without replacement (i.e., without replacing the first marble in the urn before drawing the second one). Assuming that you only keep track of the colors of the marbles drawn (and not the order in which they are drawn), give the sample space for your experiment.
 - (b) Tell how the answer would change if the drawings were done with replacement.
2. Number 3 from Chapter 2 Problems (p 50)
3. Number 6 from Chapter 2 Problems (p 50)
4. Number 12 from Chapter 2 Problems (p 51)
5. Number 6 from Chapter 2 Theoretical Exercises (p 55)
6. Number 11 from Chapter 2 Theoretical Exercises (p 55)
7. Number 13 from Chapter 2 Theoretical Exercises (p 55)
8. Given that $P(A \cup B) = 0.76$ and $P(A \cup B^c) = 0.87$, find $P(A)$. Use a Venn diagram to solve this and then demonstrate how to use some of the algebraic set formulas we have seen in class and in Sections 2.2 and 2.3 of the book to verify the answer.