

Homework 1

Do the problems on webassign and turn the following problems in class on Jan. 26th.

Homework should be written neatly and clearly explained. If it requires more than one sheet, the sheets must be stapled. Include your name and id number in the top right corner of your homework.

Problem 1. Use the axioms of probability to show that for any two events A and B

$$\mathbf{P}(A \cap B) \leq \mathbf{P}(A) \leq \mathbf{P}(A \cup B).$$

Problem 2. A website sells custom designed shirts. During the purchase they first ask you for the size (you can choose S, M, L or XL), then they ask you for the pattern (stripes, solids or checkered), then they ask you for the sleeve length (short or long), and finally they ask you to choose one of 3 different colors. How many possible shirts can be made if the only restriction is that short sleeve shirts must be checkered?