

## Homework 1(Due on September 5)

August 29, 2013

STA 4442/5440

### Problems from the Sheldon Ross book (8th Edition)

Page 16-17: Problem no. 10, 13, 19, 31

Page 18-19 (Theoretical Exercises): 8, 9, 11

#### “Points on the plane” problem

Given ten points in the plane with no three collinear.

1. How many different segments joining two points are there?
2. How many ways are there to choose a directed path of length two through three distinct points?
3. How many different triangles are there?
4. How many ways are there to choose 4 segments?
5. If you choose 4 segments at random, what is the chance that some three form a triangle? Chance is defined as (the number of ways of choosing 4 segments that includes a triangle) divided by (the number of ways to choose 4 segments).