

# Homework 3

## *Math 611 Probability*

due Monday Oct. 20 2008 by 6:15pm

From the problems in the handout do the following exercises: 58, 59, 71, 17, 73.

In addition do the following problems:

- (1) Choose a point  $A$  at random in the interval  $[0, 1]$ . Let  $L_1$  (respectively  $L_2$ ) be the length of the bigger (respectively smaller) segment determined by  $A$  on  $[0, 1]$ . Calculate:
  - (a)  $\mathbf{P}(L_1 \leq x)$  for  $x \in \mathbb{R}$ .
  - (b)  $\mathbf{P}(L_2 \leq x)$  for  $x \in \mathbb{R}$ .
- (2) Two friends decide to meet at the Castle gate of Stevens Institute. They each arrive at that spot at some random time between  $a$  and  $a + T$ . They each wait for 15 minutes then leave if the other did not appear. What is the probability that they meet?

As always any exercises assigned in class count for bonus points.