

Math 262 Reading Guide

Section 4.9

NAME _____

Read Section 4.9 and answer the following questions. *Hand in this worksheet at the next class.*

1. What are **order statistics**? (You don't need to copy the definition verbatim from the book; just summarize it in your own words.)

2. Suppose a random sample of size n is taken from a continuous distribution with cdf $F(x)$ and pdf $f(x)$.

(a) What is the pdf of Y_n , the largest order statistic?

(b) What is the pdf of Y_1 , the smallest order statistic?

(c) What is the pdf of Y_i , the i^{th} smallest order statistic?

3. In Example 4.54, how are order statistics used to find the expected value of the *sample range* $Y_4 - Y_1$?