



COLLEGE OF CHARLESTON

Midterm 1 Review

Math 104-03: Elementary Statistics

Thursday September 12th

- ▶ Midterm 1 is take-home
- ▶ No collaborating
- ▶ Opens at 5:30pm, Closes 7pm
- ▶ 1 hour to answer questions

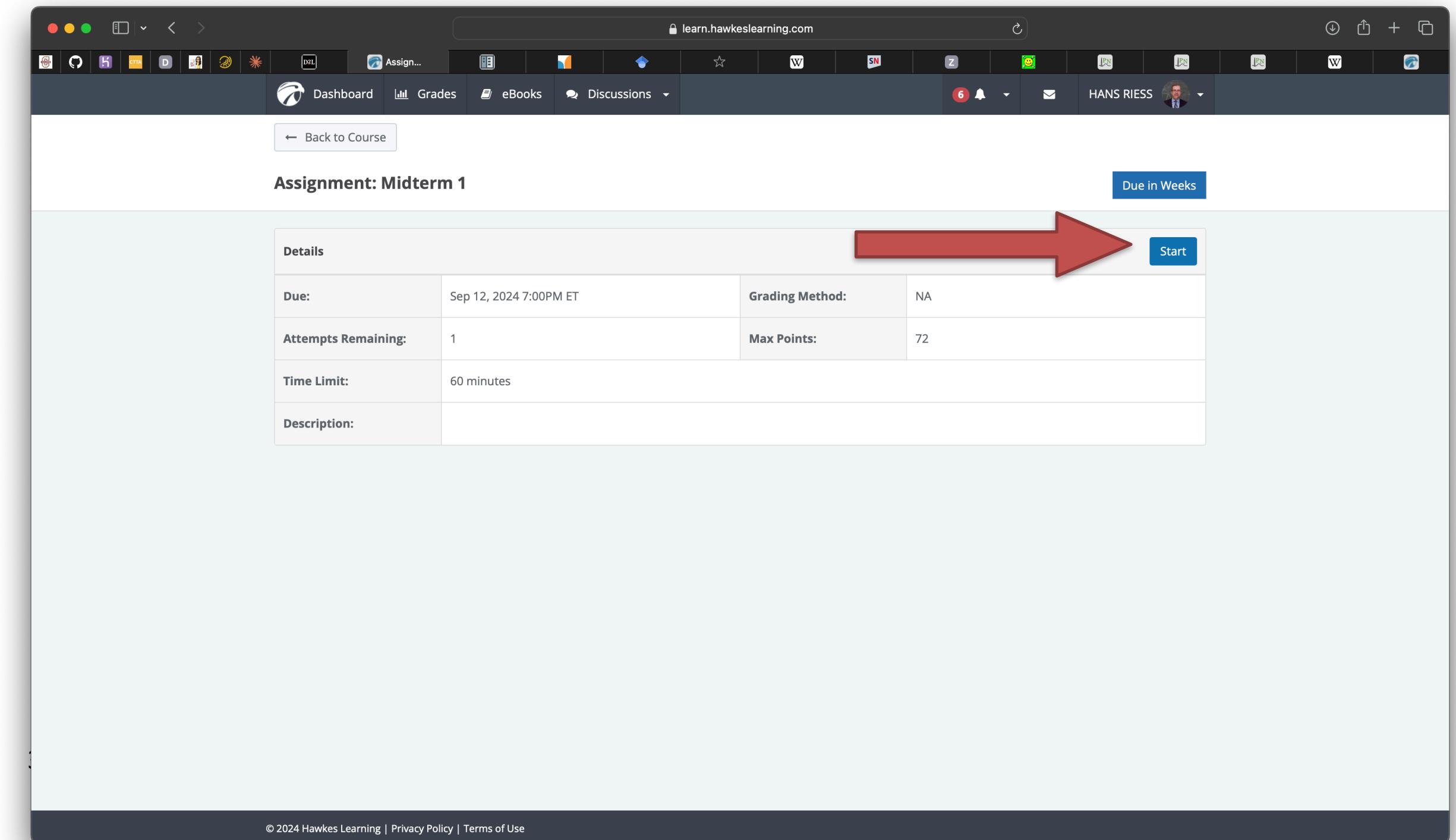
The screenshot shows a web browser window with a dark theme. The address bar indicates the URL is `lms.cofc.edu`. The main content area displays a course schedule:

- 3.3 Measures of Relative Position** (External Learning Tool) - Due September 5 at 11:59 PM
- Midterm 1** (External Learning Tool) - Starts Sep 4, 2024 5:30 PM; Due September 12 at 8:00 PM (marked with a checkmark)
- Midterm 2** (External Learning Tool) - Starts Oct 10, 2024 5:30 PM; Due October 10 at 7:00 PM

A large red arrow points to the "Due September 12 at 8:00 PM" entry under the Midterm 1 section.

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A screenshot of a web browser displaying the Hawkes Learning platform. The URL in the address bar is learn.hawkeslearning.com. The page shows an assignment titled "Assignment: Midterm 1". The assignment details are as follows:

Details	
Due:	Sep 12, 2024 7:00PM ET
Attempts Remaining:	1
Time Limit:	60 minutes
Description:	(empty)

A large red arrow points from the text "Due in Weeks" in the top right corner towards the due date field. A blue "Start" button is located in the top right corner of the details table.

Chapter 1

- ▶ What to study:
 - Know the difference between **descriptive** and **inferential** statistics
 - Identify the **population** and a **sample**
 - Know difference between **qualitative** and **quantitative** data
 - Know the difference between **continuous** and **discrete** data
- ▶ Study questions:
 - Identify the population in the following statement: "The price of cars of a sample of 10 cars at a local dealership."
 - Does the statement describe a sample or population: "The residents of the state of South Carolina."
 - Identify if the data type is continuous or discrete: the heights of students in our class.
 - 4 - Identify if the data type is continuous or discrete: the number of siblings of students in our class.

Chapter 2

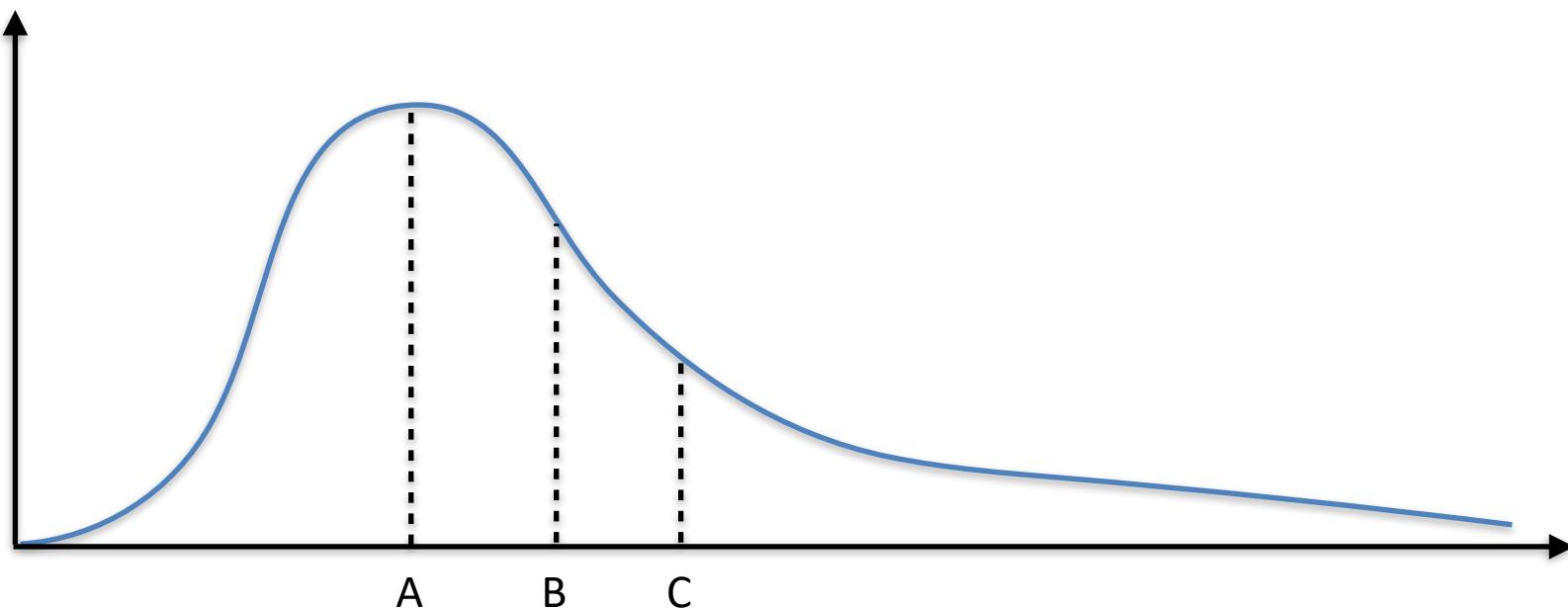
- ▶ Be able to determine the frequency of each class from a table.
- ▶ Be able to answer questions about a histogram
- ▶ Do NOT need to know to calculate class boundaries and midpoints
- ▶ Identify shapes of a graph
 - uniform, symmetric, skewed to the left, skewed to the right
- ▶ Study question:
 - The following describes percentage of satisfied customers. Determine the frequency of each class in the table below:

78.6, 80.8, 90.0, 88.4, 93.6, 80.1,
83.2, 80.8, 86.0, 80.0, 77.6, 80.0,
86.7, 88.4, 86.2, 78.0, 85.8, 76.4

Class	Frequency
76.0 - 79.9	
80.0 - 83.9	
84.0 - 87.9	
88.0 - 91.9	
92.0 - 95.9	

Chapter 3

- ▶ Be able to calculate the sample mean and median from a small data set
- ▶ Be able to determine the mode (if it exists) and if the data is
 - unimodal, bimodal, multimodal, or has no mode
- ▶ Be able to determine the relative position of the mean, median and mode
- ▶ **Study question:** for the graph shown, determine which letter represents the mean, the median, and the mode. Letters may be used more than once.



Chapter 3

- ▶ Be able to calculate the sample variance, sample standard deviation, and range from a small dataset
- ▶ Be able to answer questions about a box plot
- ▶ Be able to calculate z-scores
- ▶ Be able to find the value corresponding to the Pth percentile from a small dataset
- ▶ **Study question:** given a set of data in which the sample mean is $\bar{x} = 52.4$ and the sample standard deviation is $s = 4.9$, calculate the z-score given that $x = 69.7$?

Chapter 4

- ▶ Understand the terminology: sample space, outcome, event
- ▶ Identify values that could be probabilities
- ▶ Write down the sample space for a simple experiment
- ▶ Calculate the probability of an event when all outcomes are equally likely to occur
- ▶ Apply the complement rule to calculate probabilities
- ▶ Apply the addition rule, as well as the addition rule for mutually exclusive events
- ▶ Apply the multiplication rule, as well as the multiplication rule for independent events
- ▶ **Study question:** two standard six-sided die are rolled. What is the probability of not rolling doubles?