BUSAD 265 Exam 1 Name: ______________________________
Sep 18, 2025

Part 1. Weekly Study Hours

A group of Business and STEM students reported their weekly study hours, as follows.
Business (n = 9): 6, 8, 9, 11, 13, 15, 17, 20, 24
STEM (n = 9): 7, 10, 12, 13, 16, 19, 21, 23, 29

1. Make a back-to-back stemplot to compare the two groups.
2. Calculate the mean and sample standard deviation for each group (show work).
3. Find the five-number summary for each group.
4. Create side-by-side boxplots on the same scale; label axes and groups.
5. In 1–2 sentences, compare the study habits of these Business and STEM students.

Part 2. SAT Scores

The SAT Math section is required for admission to many undergraduate programs. Between 2021 and 2023, SAT Math scores were approximately normally distributed with a mean of 520 and a standard deviation of 110, i.e., **N(520, 110)**.

1. Calculate the Z-scores for SAT Math scores of 400, 500, 600, and 700. Show your work.
2. Using the standard normal (Z) table, find the proportion of test takers scoring below each of the four values above.
3. Using your results, answer the following probability questions. For each, draw a normal curve, label the mean and relevant score(s), and shade the appropriate region.
   a. What proportion of SAT Math test takers scored less than 400?
   b. What proportion scored more than 700?
   c. What proportion scored between 600 and 700?
   d. What proportion scored between 400 and 600?