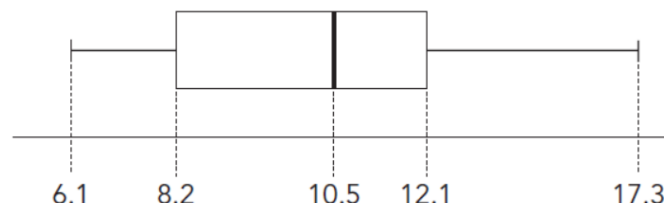


Taibah University College of Computers science and Engineering		Date: WED 13 Sep. 2023 Time: 2:00 — 2:30
الاحتمالات والإحصاء الهندسي STAT 305 YM2 – Quiz 01		Total Marks: 15

- Sarah collected data on the monthly salaries of her colleagues. She decided to represent the data using a box plot. If the lower quartile is \$3,000 and the upper quartile is \$5,000, what is the interquartile range (IQR)?
 - \$1,000
 - \$2,000**
 - \$8,000
 - \$1,500
- In a box plot, the median is represented by the:
 - Top whisker
 - Bottom whisker
 - Middle line of the box**
 - Edges of the box
- John was analyzing the scores of students in a math test. If the box in his box plot starts at 40 and ends at 70, which of the following is true?
 - The minimum score is 40.
 - The maximum score is 70.
 - 50% of the students scored between 40 and 70.**
 - The median score is 55.
- In a box plot, if the whiskers are very long:
 - The data is highly skewed.
 - There is a lot of variability in the data.**
 - The median is very high.
 - The data is normally distributed.
- Emma observed that the box in her box plot was very narrow. This indicates that:
 - The data is spread out.
 - The data is closely packed.**
 - The median is low.
 - There are many outliers.
- During a science experiment, Alex recorded the time taken for a reaction to complete. If the upper whisker of his box plot ends at 15 seconds, this means:
 - The maximum time taken is 15 seconds.
 - The median time is 15 seconds.
 - 75% of the reactions took 15 seconds or less.**
 - 25% of the reactions took more than 15 seconds.
- In a box plot, the presence of dots above the upper whisker indicates:
 - The median value.
 - The maximum value.
 - Outliers.**
 - The upper quartile.
- Lucy was comparing the box plots of two different products' sales. If one box plot has a higher median than the other, it indicates:
 - The first product has more sales.
 - The second product has more sales.
 - The first product has a higher average sale.**
 - The data for the first product is more spread out.
- In a box plot, if the lower whisker is shorter than the upper whisker, it suggests:
 - The data is positively skewed.
 - The data is negatively skewed.
 - The data is normally distributed.
 - There are more outliers in the lower half.

- During a survey, Mike found that the lower quartile of the ages of participants was 25 and the upper quartile was 45. If he were to draw a box plot, the box would represent ages between:
 - 0 and 25
 - 25 and 45**
 - 45 and the maximum age
 - The minimum age and 25

For questions 11–13, refer to the following box plot:



- What is the range of the dataset whose box plot is shown?
 - 11.2**
 - 9.1
 - 6.8
 - 3.9
- What is the IQR of the data set whose box plot is shown?
 - 11.2
 - 9.1
 - 6.8
 - 3.9**
- Which of the following statements is always true of the box plot shown?
 - There are no outliers in the data.**
 - A value of 17.3 is a possible outlier.
 - Any value between 6.1 and 8.2 is a possible outlier.
 - Any value between 12.1 and 17.3 is a possible outlier.
- Anna is a researcher studying the heights of adult males in her city. She plotted the data on a box plot and noticed that the median height was significantly closer to the third quartile than the first quartile. What can Anna infer from this observation?
 - Most adult males in her city are shorter than the median height.**
 - Most adult males in her city are taller than the median height.
 - The height data is normally distributed.
 - There are no outliers in the height data.
- In a box plot displaying the distribution of scores for a national exam, the whiskers extend from 45 to 95, while the box spans from 60 to 80. If a student scored 85, which of the following statements is true regarding their performance?
 - The student scored in the top 25% of examinees.**
 - The student's score is considered an outlier.
 - The student scored below the median.
 - The student's score is within the interquartile range.

BEST WISHES
Dr. Mostafa A. Elhosseini

Professor of AI – Taibah University