Sri Lanka Institute of Information Technology

Year 02 – Semester II – 2022

Probability and Statistics – IT2110

Tutorial 02

1. Find Q1, Q2, and Q3 for the following data set, and draw a box-and-whisker plot.

   {2,6,7,8,8,11,12,13,14,15,22,23}

   Also determine whether there any outliers.

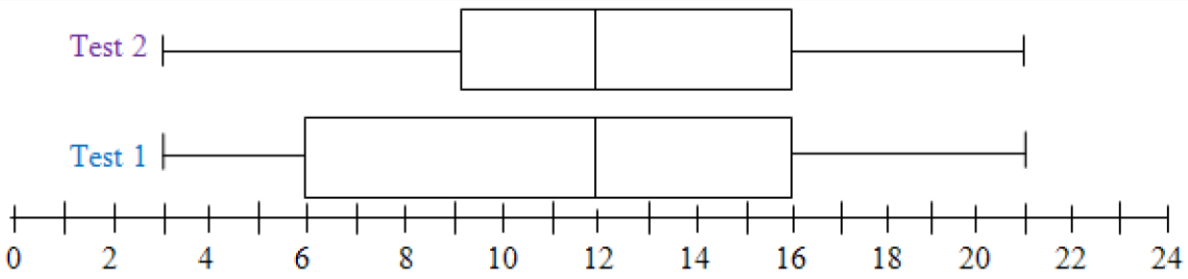
2. Draw a box-and-whisker plots for the two data sets.

   {3, 7, 8, 5, 12, 14, 21, 13, 18} & {3, 7, 8, 5, 12, 14, 21, 15, 18, 14}

3. Suppose that the box-and-whisker plots below represent quiz scores out of 25 points for Quiz 1 and Quiz 2 for the same class.

   What do these box-and-whisker plots show about how the class did on **Test 2** compared to **Test 1**?

   Also check whether there are any outliers in the two tests



4. The following dollar amounts were the hourly collections from a Salvation Army kettle at a local store one day in December:

   $19, $26, $25, $37, $32, $28, $22, $23, $29, $34, $39, $31

   Construct the box-and-whisker plot for the amount collected. Also find whether there are any outliers.

5. Construct the box-and-whisker plot and find the outliers, if any, for the following data set.
   10.2, 14.1, 14.4.14.4, 14.4, 14.5, 14.5, 14.6, 14.7, 14.7, 14.7, 14.9, 15.1, 15.9, 16.4

6. Find the outliers, if any, for the following data set, and draw box-and-whisker plot. Mark any outliers with an asterisk.

   21, 23, 24, 25, 29, 33, 49

7. Draw the box-and-whisker plot for the following data set.

   77, 79, 80, 86, 87, 87, 94, 99

8. Determine the mean, median and mode values for the data set:

   {3, 8, 10, 7, 5, 14, 2, 9, 8}

9. Determine the mean, median and mode values for the data set:

   {26, 31, 21, 29, 32, 26, 25, 28}

10. Determine the mean, median and mode values for the data set:

    {4.72, 4.71, 4.74, 4.73, 4.72, 4.71, 4.73, 4.72}

11. 21 bricks have a mean mass of 24.2 kg and 29 similar bricks have a mass of 23.6 kg. Determine the mean mass of the 50 bricks.

12. Determine the standard deviation from the mean of the following set of numbers correct to 3 significant figures.

    {35, 22, 25, 23, 28, 33, 30}

13. The values of capacitances, in microfarads, of ten capacitors selected at random from a large batch of similar capacitors are: 34.3, 25.0, 30.4, 34.6, 29.6, 28.7, 33.4, 32.7, 29.0 and 31.3. Determine the standard deviation from the mean for these capacitors, correct to 3 significant figures.

14. Determine the standard deviation from the mean, correct to 4 significant figures, for the heights of the 100 people given in the following frequency table.

Height	frequency
153	5
160	18
167	20
174	27
181	22
188	8

15. A student received scores of 92%, 83%, and 71% on three quizzes. What is the lowest score that the student can get on the next test, which is out of 200, to achieve a mean of at least 80%?