TM01

Question 1

a)

i. A histogram and a box and whisker-plot can be used to display the distribution of heights. The histogram can be used to check whether the observations are normally distributed and the box and whisker-plot can be used to assess if there are outliers in the data.

ii. A bar chart is suitable for showing the number of trees alive at each age. A bar chart is suitable for visually inspecting the distribution of frequencies across the categories.

iii. A Scatterplot of height against ages can be used to display how heights are distributed across the different ages. A bar chart showing the average height across the ages can also be used to inspect the difference in heights across the different ages visually.

b)

i.



The distribution of depth measurements deviates from normality. The histogram is bimodal and is skewed to the right. It can also be observed that there are outliers at the higher observations.

ii.



The histogram displays a bimodal distribution that is skewed to the right. The median of the distribution is greater than 30 but less than 40. This histogram does not display any outliers. The histogram in ii is better than the histogram in i because ii presents a clear image because fewer bins presents distinct differences between the classes.

iii.



The histogram in b(ii) displayed the y-axis of the histogram as a frequency of the observations within a specific class while the unit-area histogram presents the area of each bar as a proportion of the observations within that class to the total observations.

Verify the sum = (0.00526 + 0.01579 + 0.01842 + 0.01228+0.01140+0.01998+0.01228+0.00351+0.001754) = 0.1\*10 = 1

iv.

**Descriptive Statistics: Depth**

Variable N Mean Median

Depth 114 39.24 37.00

The mean of the observations is 39.24, and the median is 37.00. The mean is greater than the median because the observations are skewed to the right. The extreme observations of the right of the distribution curve affect the mean by inflating the value.