Chapter 2 Summarising Data: Listing and Grouping

Question 1

Consider the following assignment marks from 0 to a maximum of 10.

4  6  9  4  8  7  6  9  7  2  6  7
1  3  3  9  4  7  5  8  6  7  7  5

Draw a bar chart to summarise the data shown above.

Question 2

Draw a frequency polygon to represent a summary of the above data in Question 1.

Question 3

Draw a pie diagram to represent the above data in Question 1. Include each mark category on the diagram and the percentage of the total number of marks each slice of the pie represents.

Question 4

What is the mean of the marks in Question 1?

Question 5

What is the mode of the marks in Question 1?

Question 6

What is the median of the marks in Question 1?

Question 7

We can assign each element of data to \( x \) using subscripts as follows:

\[ x_1 = 4, x_2 = 6, x_3 = 9, \ldots, x_{23} = 7, x_{24} = 5 \]

Evaluate the following:

(a) \[ \sum_{i=1}^{24} x_i \]
(b) \[ \sum_{i=5}^{20} x_i \]

(c) \[ \sum_{i=1}^{10} x_i - \sum_{i=11}^{20} x_i + \sum_{i=21}^{24} x_i \]

(d) \[ \sum_{i=1}^{24} x_i^2 \]

(e) \[ \sum_{i=1}^{24} (x_i - \bar{x})^2 \]