

SAMPLE PAPER 6: PAPER 2

QUESTION 1 (25 MARKS)

Question 1 (a)

40, 48, 50, 52, 56, 58, 60, 65, 68, 70

(i) Mean $\mu = 56.7$

(ii) Standard deviation $\sigma = 8.99$

Question 1 (b)

48, 48, 52, 57, **59, 61**, 63, 63, 98, 100

(i) There are two middle values when the data is laid out in order: 59 and 61. Get the mean of these two values.

$$\text{Median (middle value)} = \frac{59 + 61}{2} = 60$$

(ii) 48, 48, **52**, 57, **59, 61**, 63, **63**, 98, 100

$$Q_1 = 52, Q_3 = 63$$

$$\text{Interquartile range} = Q_3 - Q_1 = 63 - 52 = 11$$

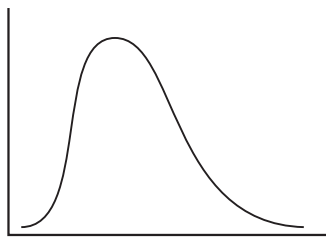
Casio *fx-85GT PLUS*
Finding mean and standard deviation
 | Press Mode
 | Press 2: Stat
 | Press 1:1-Var
 | Input values pressing = after each value
 | Press AC
 | Press Shift followed by 1
 | Press 4: Var
 | Press 2: \bar{x} (mean)
 | Press equals
 | Press Shift followed by 1
 | Press 4: Var
 | Press 3: σx (standard deviation)
 | Press equals

Question 1 (c)

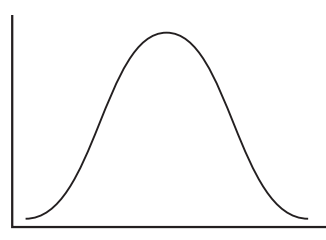
In **part (a)**, there are no extreme values or outliers so values are normally distributed. Therefore, the mean and standard deviation take account of all values.

In **part (b)**, there are extreme values or outliers (10, 98, 100). Therefore, the median and interquartile range give a better picture of central tendency and the spread. The mean and standard deviation are sensitive to outliers.

Question 1 (d)



(i) Median and interquartile range



(ii) Mean and standard deviation