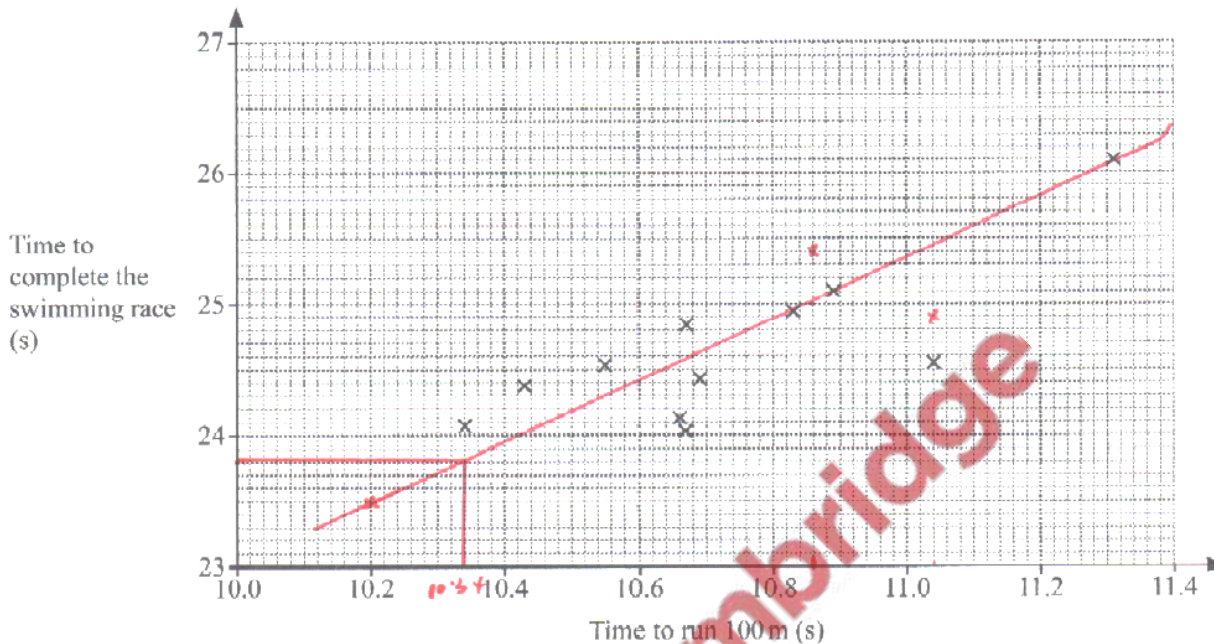# Statistics – 2025 Specimen IGCSE 0580 Math

1. Specimen/2025/Paper_01/No.15

   (a) As part of a sports competition, 14 athletes run 100 m and complete a swimming race.

   The scatter diagram shows the times, in seconds, to run 100 m and the times, in seconds, to complete the swimming race, for 11 of these athletes.

   The table shows the times for the other 3 athletes.

Time to run 100 m (s)	10.20	10.86	11.04
Time to complete the swimming race (s)	23.5	25.4	24.9

   (i) On the scatter diagram, plot these three points. [2]

   (ii) State the type of correlation shown in the scatter diagram.

   Positive Correlation [1]

   (iii) On the scatter diagram, draw a line of best fit. [1]

   (iv) Another athlete completes the swimming race in 23.8 seconds.

   Use your line of best fit to estimate the athlete's time to run 100 m.

   10·34 .... s [1]

(b) The table shows the diameter, in centimetres, and the mass, in grams, of nine medals.

Diameter (cm)	85	85	70	60	68	70	70	60	66
Mass (g)	500	412	200	135	180	181	231	152	102

(i) Write down the mode of the diameters.

.... 70 .... cm [1]

(ii) Find the median of the masses.

Arrange Masses in ascending order.

102, 135, 152, 180, (181),

200, 231, 412, 500

Median = 181

.... 181 .... g [2]
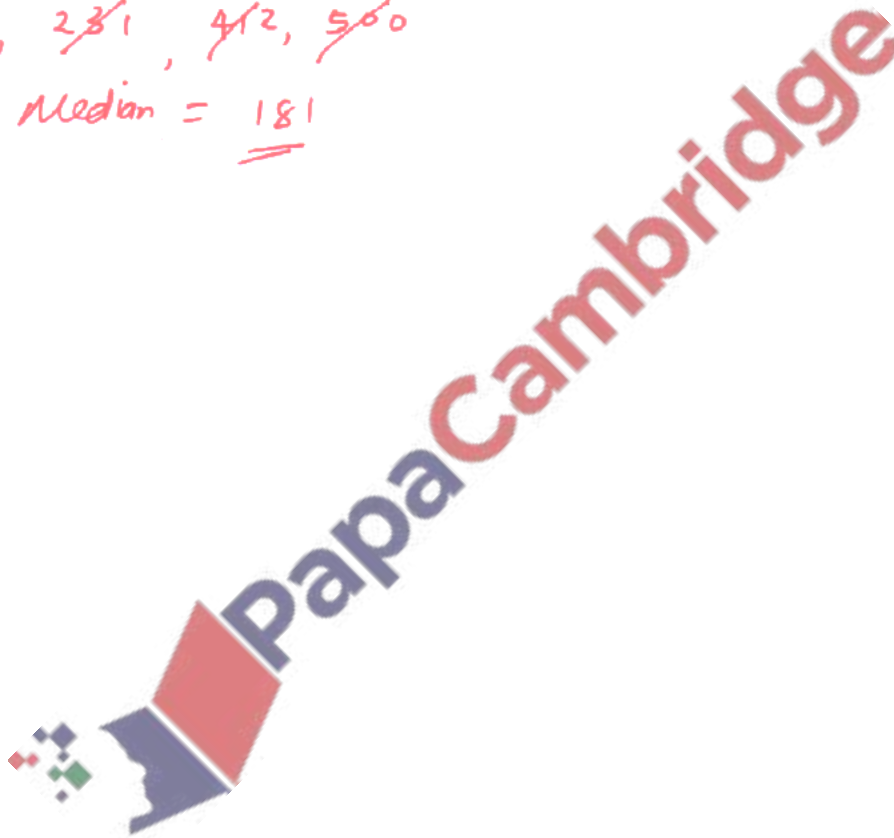
The range, mode, median and mean of five positive integers are all equal to 10.

Find one possible set of these five integers.

The Middle Value (Median) = 10

Model (Most common number) = 10

Range = Highest - lowest.

$10 = 14 - x$

lowest = $-x = 10 - 14$

$\to x = \cancel{+} \ 4$

$x = \underline{\underline{4}}$

Mean = $\dfrac{4 + 10 + 10 + 14 + x}{}$

$= 38 + x$

Total = $10 \times 5 = 50$

$38 + \dfrac{x}{2} = 50$

$\dfrac{x}{2} = 50 - 38$

$x_2 = \underline{\underline{12}}$

4 , 10 , 10 , 12 , 14 [4]
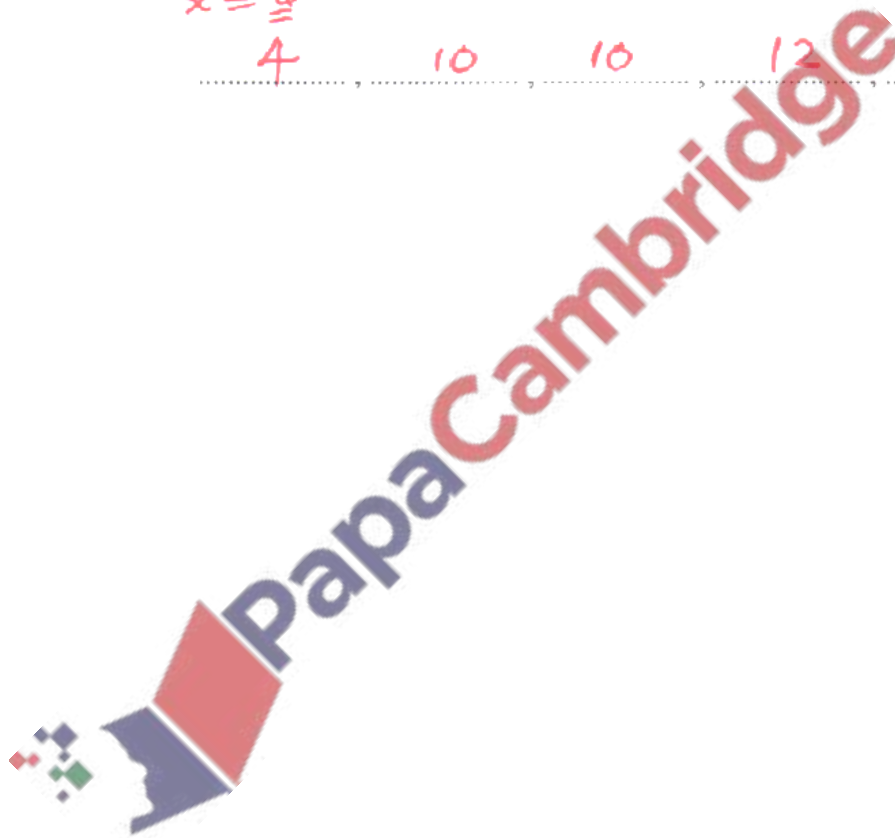
A student measures the height, h cm, of each of 400 plants.

(a) The cumulative frequency diagram shows the results.

Cumulative frequency

Height (cm)
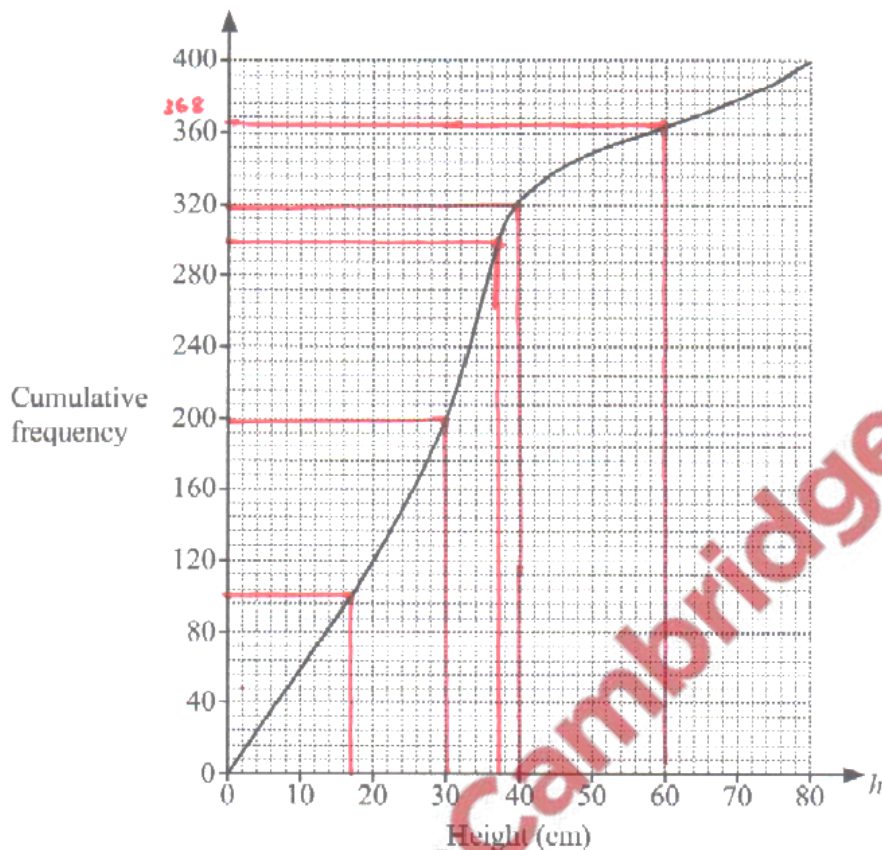
Use the diagram to find an estimate for

(i) the median

Median $= \frac{N^{th}}{2} = \frac{400}{2}$
$= 200^{th} \div 30\,cm$

.... 30 .... cm [1]

(ii) the interquartile range

Lower Quartile $= \frac{1}{4} \times 400 = 100^{th}$ value $= 16\,cm$
Upper Quartile $= \frac{3}{4} \times 400 = 300^{th}$ value $= 37\,cm$

IQR $= 37cm - 16cm$
21

.... cm [2]

(iii) the 80th percentile

$\frac{80}{100} \times 400 = 320 \div 39\,cm$

.... 39 .... cm [2]

(iv) the number of plants with a height greater than 60 cm.

Greater than 60cm $= 400 - 368$
$= 32\,plants$

32

.... [2]

4

Frequency density = $\dfrac{F}{c \cdot w}$

(b) The heights are also shown in the frequency table.

Height (h cm)	$0 < h \leqslant 20$	$20 < h \leqslant 30$	$30 < h \leqslant 40$	$40 < h \leqslant 80$
Frequency	120	80	124	76
Class width	20	10	10	40
Frequency density	6	8	12.4	1.9

Complete the histogram to show this information.

[3]
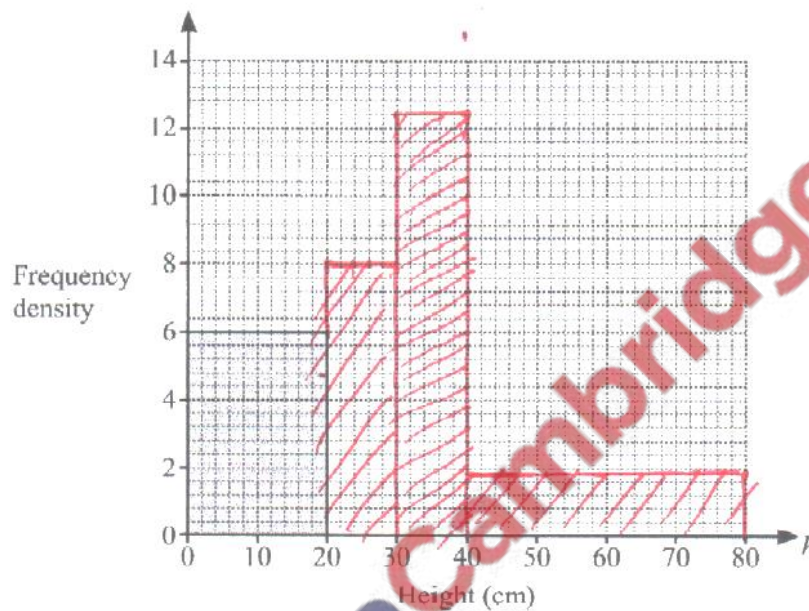
The pictogram shows the number of text messages sent by five students in one day.

Name of student	Number of text messages
Kira	◯ ◯ ◯ ◖
Matt	◯ ◯ ◯ ◯
Dani	◯ ◯ ◯ ◯ ◯ ◖
Hana	◯ ◯ ◺
Ramos	◯

Key: ◯ represents .... 4 .... text messages

(a) Kira sent 15 text messages.

Complete the key. [1]

(b) Find the number of text messages sent by Hana.

$(4 \times 2) + \frac{1}{4} \times 4 =$

$8 + 1 = 9$

.... 9 .... [1]

5.

The stem-and-leaf diagram shows the scores of each of 27 students in a test.

2	8 8 9
3	2 5 6 6 7 8 8
4	0 1 1 2 3 4 6 7 9
5	1 3 4 5 5 7 8
6	2

Key: 2|8 represents a score of 28

(a) Find the range of the scores.

Range = Highest score − lowest score

= 62 − 28

= 34

34 .... [1]

(b) When the score for another student is included in the diagram the new range is 38.

Find the two possible scores for this student.

New range = 38

Least score = 28

38 + 28 = 66

62 − 38 = 24

Possible values = 66 and 24

24 , 66 .... [2]

7

6. Specimen/2025/Paper_03/No.19

In a quiz, the mean score of each of 12 adults is 43.25 .
In the same quiz, the mean score of each of 16 children is 39.75 .

Calculate the mean score of the 28 people.

Total Scores for 12 Adults = $12 \times 43.25 = 519$

Total Scores for 16 children = $16 \times 39.75 = 636$

Total 28 People = 1155

Mean For 28 People = $\dfrac{1155}{28}$

$= 41.25$

.... 41.25 .... [3]

7. Specimen/2025/Paper_04/No.12

The height, h cm, of each of 100 students is measured.
The table shows the results.

Mid Point   125   155   162·5   175

Height (h cm)	$100 < h \leqslant 150$	$150 < h \leqslant 160$	$160 < h \leqslant 165$	$165 < h \leqslant 185$
Frequency	7	30	41	22

fx 875   4650   6662·5   3850

Calculate an estimate of the mean.

Mean $= \dfrac{\Sigma fx}{\Sigma f} = \dfrac{16,037.5}{100}$

$= 160.375$

.... 160·375 .... cm [4]