

1) June 2010 V1

- 2 40 students are asked about the number of people in their families.

The table shows the results.

Number of people in family	2	3	4	5	6	7
Frequency	1	1	17	12	6	3

(a) Find

(i) the mode,

Answer(a)(i) [1]

(ii) the median,

Answer(a)(ii) [1]

(iii) the mean.

Answer(a)(iii) [3]

(b) Another n students are asked about the number of people in their families.

The mean for these n students is 3.

Find, in terms of n , an expression for the mean number for all $(40 + n)$ students.

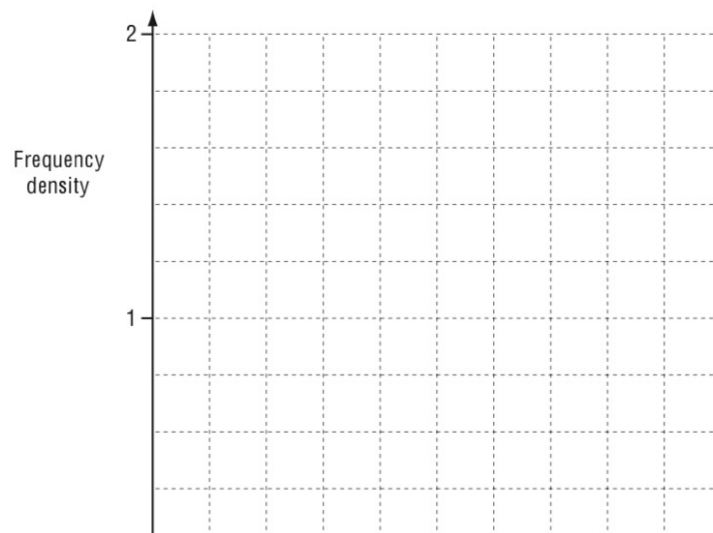
- 6 The masses of 60 potatoes are measured.
The table shows the results.

Mass (m grams)	$10 < m \leq 20$	$20 < m \leq 40$	$40 < m \leq 50$
Frequency	10	30	20

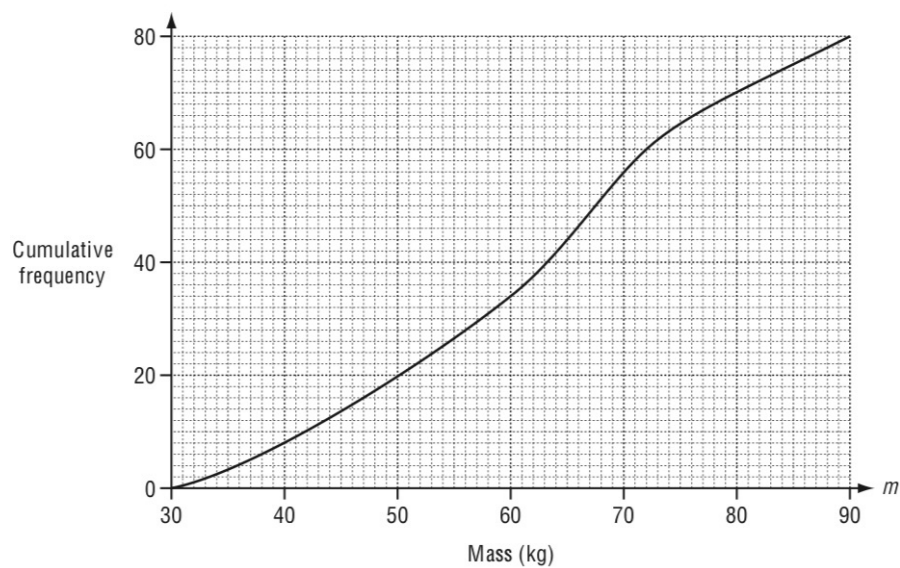
- (a) Calculate an estimate of the mean.

Answer(a) g [4]

- (b) On the grid, draw an accurate histogram to show the information in the table.



- 3 80 boys each had their mass, m kilograms, recorded.
The cumulative frequency diagram shows the results.



(a) Find

(i) the median,

Answer(a)(i) kg [1]

(ii) the lower quartile,

Answer(a)(ii) kg [1]

(iii) the interquartile range.

Answer(a)(iii) kg [1]

- (c) (i) Use the cumulative frequency graph to complete this frequency table.

Mass, m	Frequency
$30 < m \leq 40$	8
$40 < m \leq 50$	
$50 < m \leq 60$	14
$60 < m \leq 70$	22
$70 < m \leq 80$	
$80 < m \leq 90$	10

[2]

- (ii) Calculate an estimate of the mean mass.

8) June 2011 V1

- 8 The table below shows the marks scored by a group of students in a test.

Mark	11	12	13	14	15	16	17	18
Frequency	10	8	16	11	7	8	6	9

- (a) Find the mean, median and mode.

Answer(a) mean =

median =

mode = [6]

- (b) The table below shows the time (t minutes) taken by the students to complete the test.

Time (t)	$0 < t \leq 10$	$10 < t \leq 20$	$20 < t \leq 30$	$30 < t \leq 40$	$40 < t \leq 50$	$50 < t \leq 60$
Frequency	2	19	16	14	15	9

- (i) Cara rearranges this information into a new table.

Complete her table.

Time (t)	$0 < t \leq 20$	$20 < t \leq 40$	$40 < t \leq 50$	$50 < t \leq 60$
Frequency				9

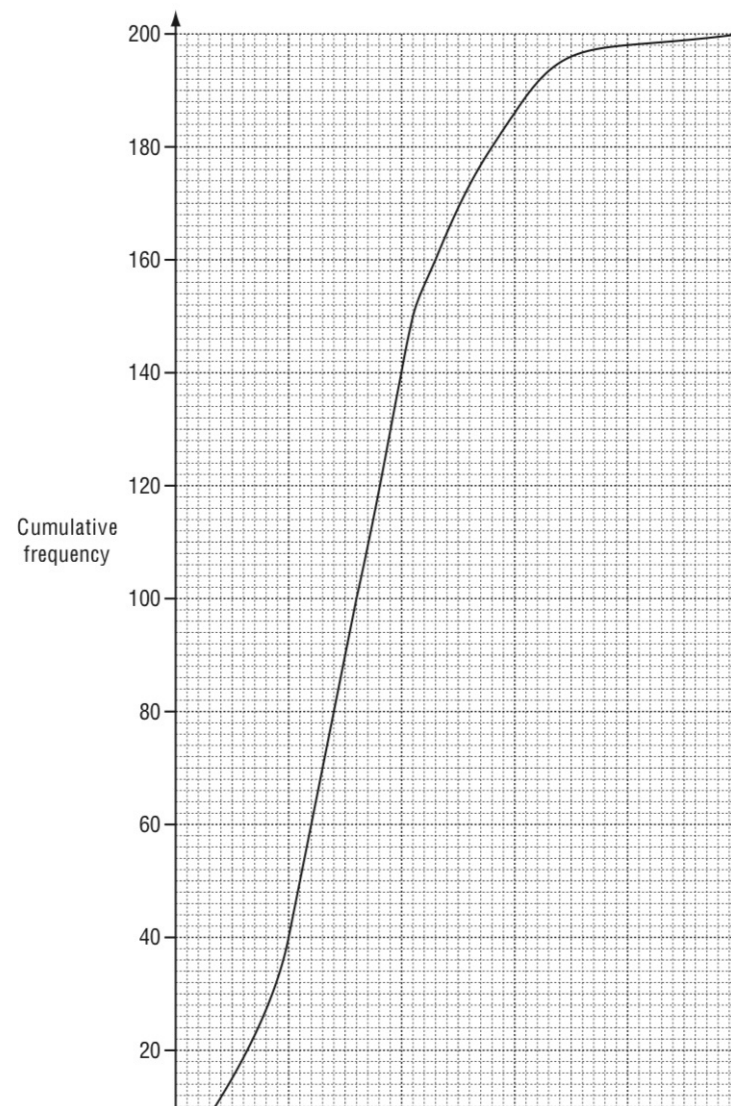
[2]

- (ii) Cara wants to draw a histogram to show the information in **part (b)(i)**.

Complete the table below to show the interval widths and the frequency densities.

	$0 < t \leq 20$	$20 < t \leq 40$	$40 < t \leq 50$	$50 < t \leq 60$
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- 3 200 students estimate the mass (m grams) of a coin.
The cumulative frequency diagram shows the results.



(a) Find

(i) the median,

Answer(a)(i) g [1]

(ii) the upper quartile,

Answer(a)(ii) g [1]

(iii) the 80th percentile,

Answer(a)(iii) g [1]

(iv) the number of students whose estimate is 7 g or less.

Answer(a)(iv) [1]

(b) (i) Use the cumulative frequency diagram to complete the frequency table.

Mass (m grams)	$0 < m \leq 2$	$2 < m \leq 4$	$4 < m \leq 6$	$6 < m \leq 8$	$8 < m \leq 10$
Frequency	40				2

[2]

(ii) A student is chosen at random.

The probability that the student estimates that the mass is greater than M grams is 0.3.

Find the value of M .

Answer(b)(ii) $M =$ [2]