

# Displaying Data

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Displaying Data
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 18 minutes

**Score:** /14

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

The table shows some information about the mass,  $m$  grams, of 200 bananas.

Mass ( $m$ grams)	$90 < m \leq 110$	$110 < m \leq 120$	$120 < m \leq 125$	$125 < m \leq 140$
Frequency	40	70	60	30
Height of column in histogram (cm)			6	

Complete the table.

[4]

## Question 2

The four sector angles in a pie chart are  $2x^\circ$ ,  $3x^\circ$ ,  $4x^\circ$  and  $90^\circ$ .

Find the value of  $x$ .

[2]

### Question 3

Michelle sells ice cream.

The table shows how many of the different flavours she sells in one hour.

Flavour	Vanilla	Strawberry	Chocolate	Mango
Number sold	6	8	9	7

Michelle wants to show this information in a pie chart.

Calculate the sector angle for mango.

[2]

### Question 4

Bruce plays a game of golf.

His scores for each of the 18 holes are shown below.

2     3     4     5     4     6     2     3     4  
4     5     3     4     3     5     4     4     4

The information is to be shown in a pie chart.

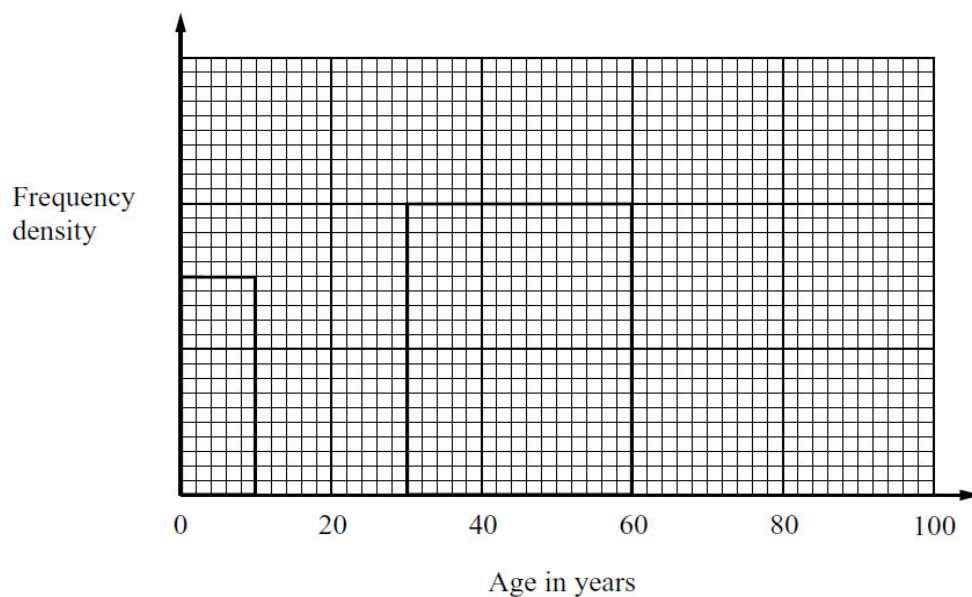
Calculate the sector angle for the score of 4.

[2]

## Question 5

A doctor's patients are grouped by age, as shown in the table and the histogram below.

Age ( $x$ years)	$0 \leq x < 10$	$10 \leq x < 30$	$30 \leq x < 60$	$60 \leq x < 100$
Number of patients	300	600		880



- (a) Complete the following:  
 1 cm<sup>2</sup> represents ..... patients. [1]
- (b) Use the histogram to fill in the blank in the table. [1]
- (c) Draw the missing two rectangles to complete the histogram. [2]

# Displaying Data

## Difficulty: Hard

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Displaying Data
Paper	Paper 2
Difficulty	Hard
Booklet	Question Paper 1

**Time allowed:** 19 minutes

**Score:** /15

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

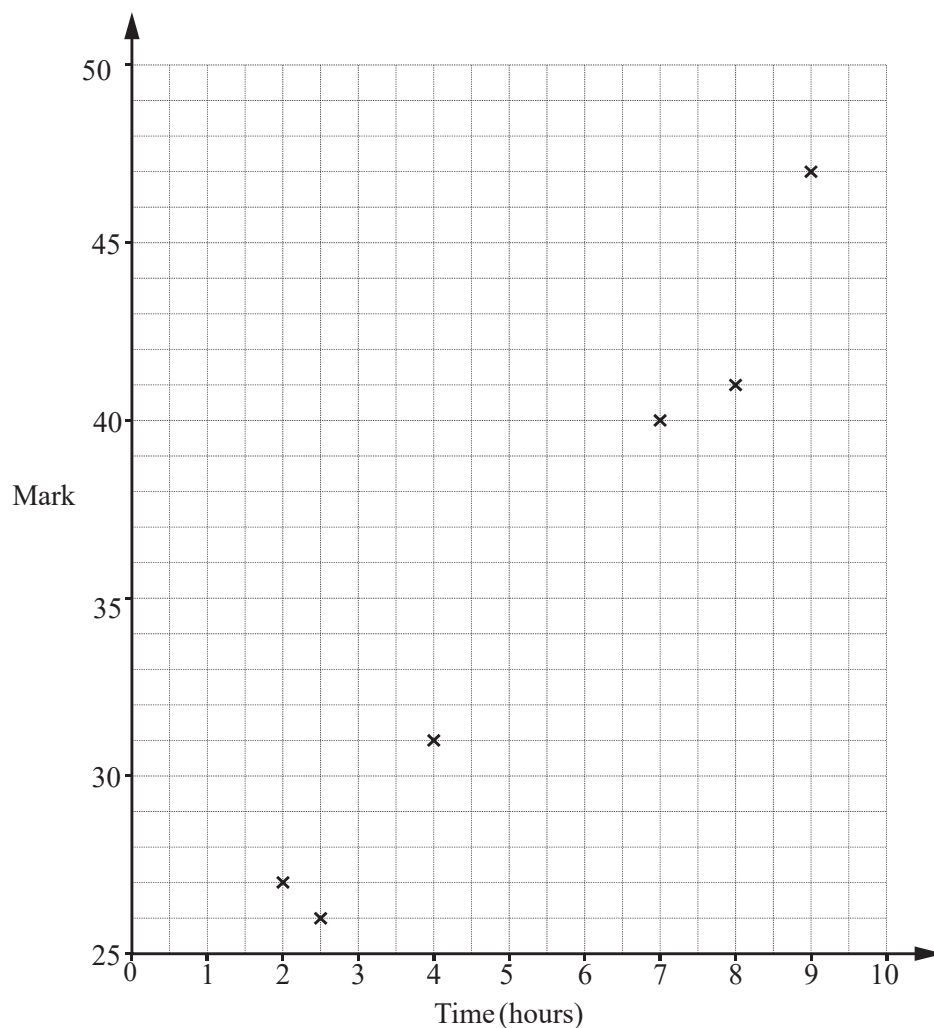
##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

Six students revise for a test.

The scatter diagram shows the time, in hours, each student spent revising and their mark in the test.



(a) The data for two more students is shown in the table.

Time (hours)	4.5	6.5
Mark	33	35

Plot these two points on the scatter diagram.

[1]

(b) What type of correlation is shown on the scatter diagram?

[1]

(c) Draw a line of best fit on the scatter diagram.

[1]

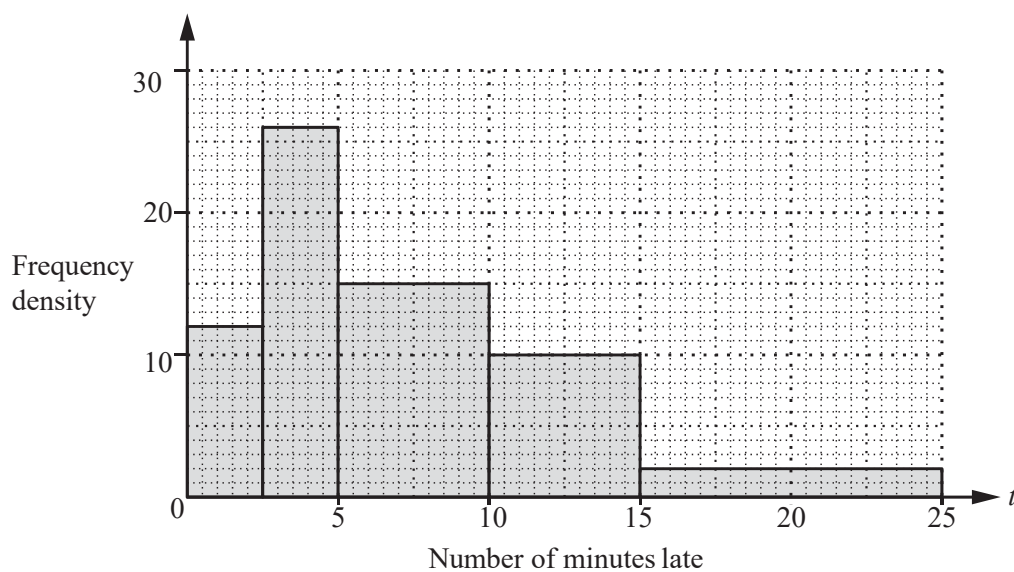
(d) Another student spent 5.5 hours revising.

Estimate a mark for this student.

[1]

## Question 2

Deborah records the number of minutes late,  $t$ , for trains arriving at a station.  
The histogram shows this information.



(a) Find the number of trains that Deborah recorded.

[2]

\

(b) Calculate the percentage of the trains recorded that arrived more than 10 minutes late.

[2]

### Question 3

Raj measures the height,  $h$  cm, of 70 plants.  
The table shows the information.

Height ( $h$ cm)	$10 < h \leq 20$	$20 < h \leq 40$	$40 < h \leq 50$	$50 < h \leq 60$	$60 < h \leq 90$
Frequency	7	15	27	13	8

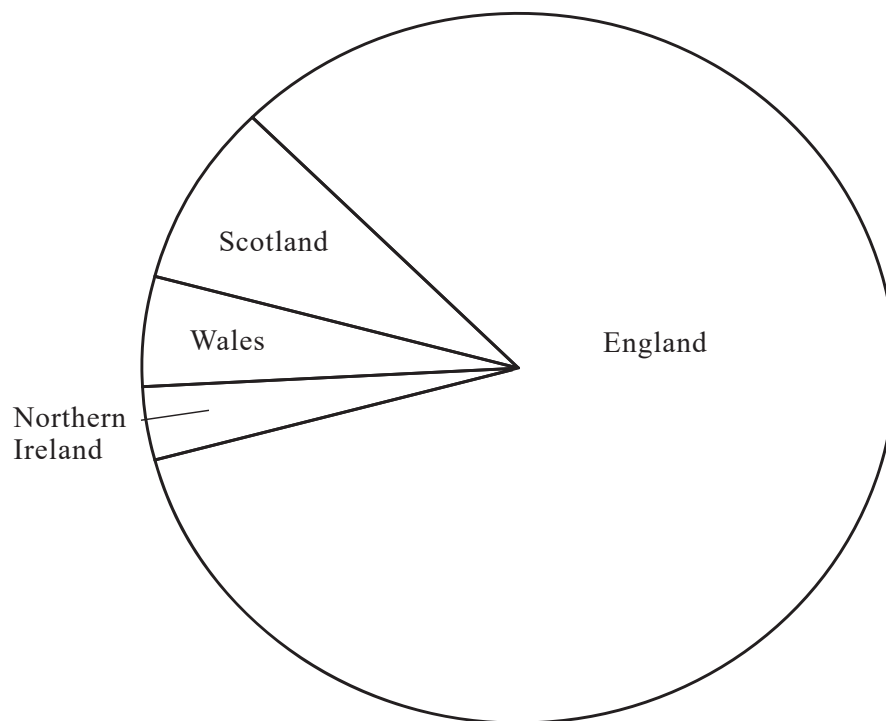
Calculate an estimate of the mean height of the plants.

[4]



## Question 4

The populations of the four countries of the United Kingdom, in the year 2000, are shown on the pie chart below.



Taking measurements from the pie chart, complete the table.

Country	Population (millions)
England	
Scotland	
Wales	
Northern Ireland	2

[3]

# Mean/Median/Mode/Range

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Mean/Median/Mode/Range
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 27 minutes

**Score:** /21

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

Amber's mean mark on five tests is 80.  
Her marks on four of these tests are 68, 81, 74 and 89.

Work out her mark on the fifth test.

[2]

## Question 2

Shahruk plays four games of golf.  
His four scores have a mean of 75, a mode of 78 and a median of 77.

Work out his four scores.

[3]

### Question 3

Jim scores the following marks in 8 tests.

7      8      8       $y$       6      9      10      5

His mean mark is 7.5 .

[2]

Calculate the value of  $y$ .

### Question 4

7      9      20      3      9

**(a)** A number is removed from this list and the median and range do not change.

[1]

Write down this number.

**(b)** An extra number is included in the original list and the mode does not change.

Write down a possible value for this number.

[1]

## Question 5

Cheryl recorded the midday temperatures in Seoul for one week in January.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Temperature ( $^{\circ}\text{C}$ )	-4	-5	-3	-11	-8	-3	-1

(a) Write down the mode. [1]

(b) On how many days was the temperature lower than the mode? [1]

## Question 6

Leon scores the following marks in 5 tests.

8   4   8    $y$    9

His mean mark is 7.2. [2]

Calculate the value of  $y$ .

## Question 7

In Vienna, the mid-day temperatures, in  $^{\circ}\text{C}$ , are recorded during a week in December. This information is shown below.

$-2 \quad 2 \quad 1 \quad -3 \quad -1 \quad -2 \quad 0$

Calculate

(a) the difference between the highest temperature and the lowest temperature, [1]

(b) the mean temperature. [2]

## Question 8

During one week in April, in Quebec, the daily minimum temperatures were

$-5^{\circ}\text{C}$ ,  $-1^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$ ,  $2^{\circ}\text{C}$ ,  $-2^{\circ}\text{C}$ ,  $0^{\circ}\text{C}$ ,  $6^{\circ}\text{C}$ .

Write down

(a) the lowest of these temperatures,

[1]

(b) the range of these temperatures.

[1]

## Question 9

For the numbers 8, 3, 5, 8, 7, 8 find

(a) the mode,

[1]

(b) the median,

[1]

(c) the mean.

[1]

# Grouped Data

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Grouped Data
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 26 minutes

**Score:** /20

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%



## Question 1

James is an animal doctor.

The table shows some information about the cats he saw in one week.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Number of cats seen	2	4	1	3	2
Mean mass of a cat (kg)	1.9	0.9	2.1	1.8	2

One of the cats James saw had a mass of 4kg.

On which day did he see this cat?

[2]

## Question 2

The table shows information about the numbers of pets owned by 24 students.

Number of pets	0	1	2	3	4	5	6
Frequency	1	2	3	5	7	3	3

(a) Calculate the mean number of pets.

[3]

(b) Jennifer joins the group of 24 students.

When the information for Jennifer is added to the table, the new mean is 3.44 .

Calculate the number of pets that Jennifer has.

[3]

### Question 3

The heights, in metres, of 200 trees in a park are measured.

Height ( $h$ m)	$2 < h \leq 6$	$6 < h \leq 10$	$10 < h \leq 13$	$13 < h \leq 17$	$17 < h \leq 19$	$19 < h \leq 20$
Frequency	23	47	45	38	32	15

(a) Find the interval which contains the median height. [1]

(b) Calculate an estimate of the mean height. [4]

(c) Complete the cumulative frequency table for the information given in the table above. [2]

Height ( $h$ m)	$2 < h \leq 6$	$h \leq 10$	$h \leq 13$	$h \leq 17$	$h \leq 19$	$h \leq 20$
Cumulative frequency	23					

## Question 4

In a traffic survey of 125 cars the number of people in each car was recorded.

Number of people in each car	1	2	3	4	5
Frequency	50	40	10	20	5

Find

(a) the range, [1]

(b) the median, [1]

(c) the mode. [1]

## Question 5

Height ( $h$ cm)	$0 < h \leq 10$	$10 < h \leq 15$	$15 < h \leq 30$
Frequency	25	$u$	9
Frequency density	2.5	4.8	$v$

The table shows information about the heights of some flowers.

Calculate the values of  $u$  and  $v$ .

[2]

# Cumulative Frequency

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Cumulative Frequency
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 37 minutes

**Score:** /29

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

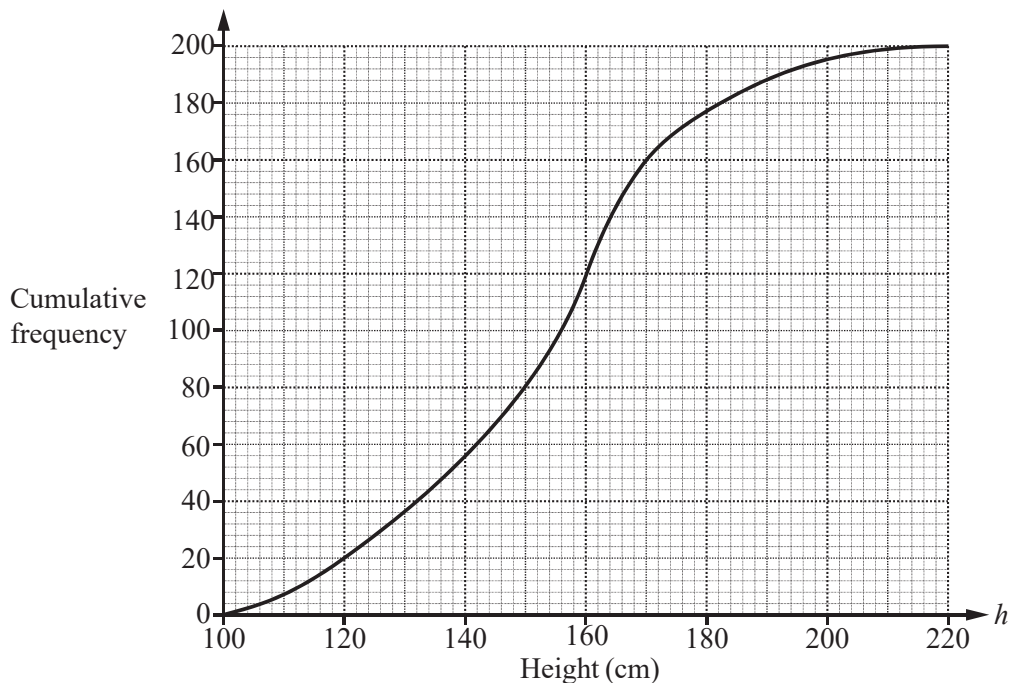
A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

Simon records the heights,  $h$  cm, of 200 sunflowers in his garden.  
The cumulative frequency diagram shows this information.



(a) Find the number of these sunflowers that have a height of more than 160 cm.

[2]

(b) Sue records the heights,  $h$  cm, of 200 sunflowers in her garden.  
The cumulative frequency table shows this information.

[3]

Height ( $h$ cm)	Cumulative frequency
$h \leq 100$	0
$h \leq 110$	20
$h \leq 120$	48
$h \leq 130$	100
$h \leq 140$	140
$h \leq 150$	172
$h \leq 160$	188
$h \leq 170$	200

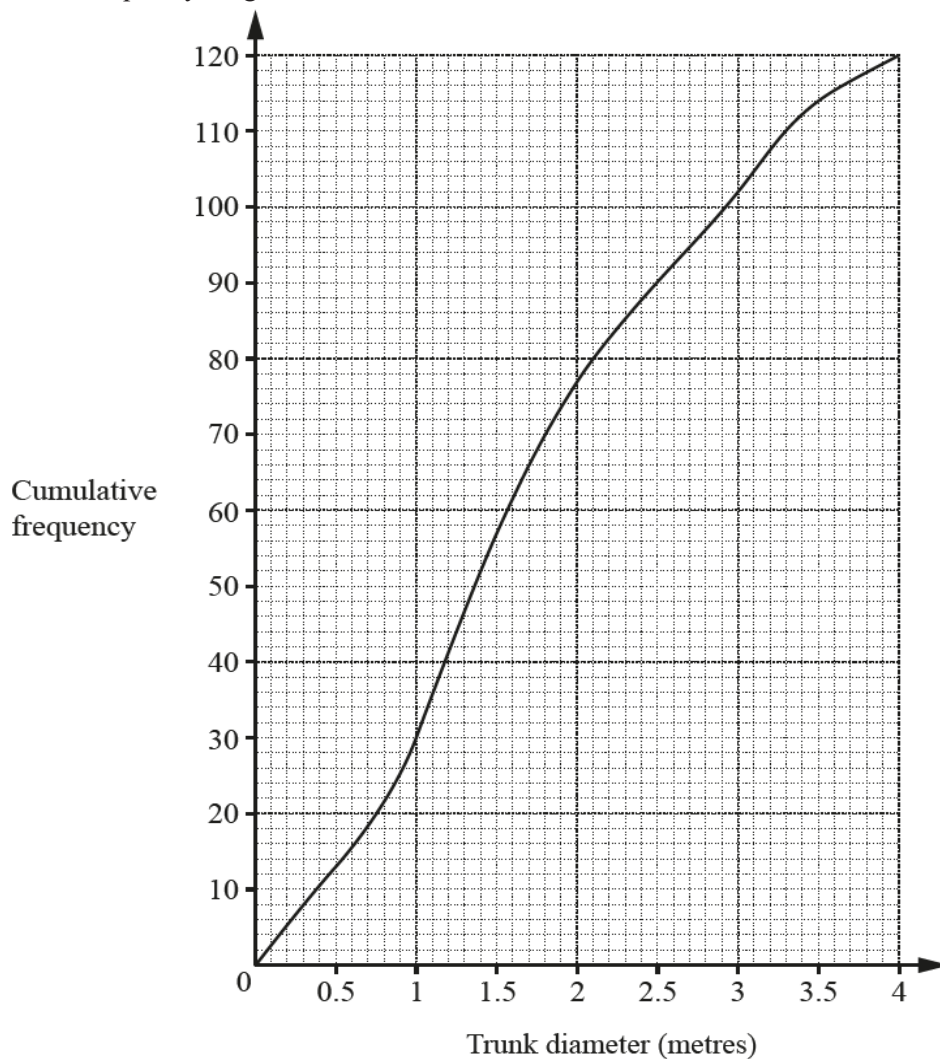
On the grid above, draw another cumulative frequency diagram to show this information.

(c) Work out the difference between the median heights of Simon's sunflowers and Sue's sunflowers.

[2]

## Question 2

The cumulative frequency diagram shows information about the trunk diameter, in metres, of 120 trees.



Find

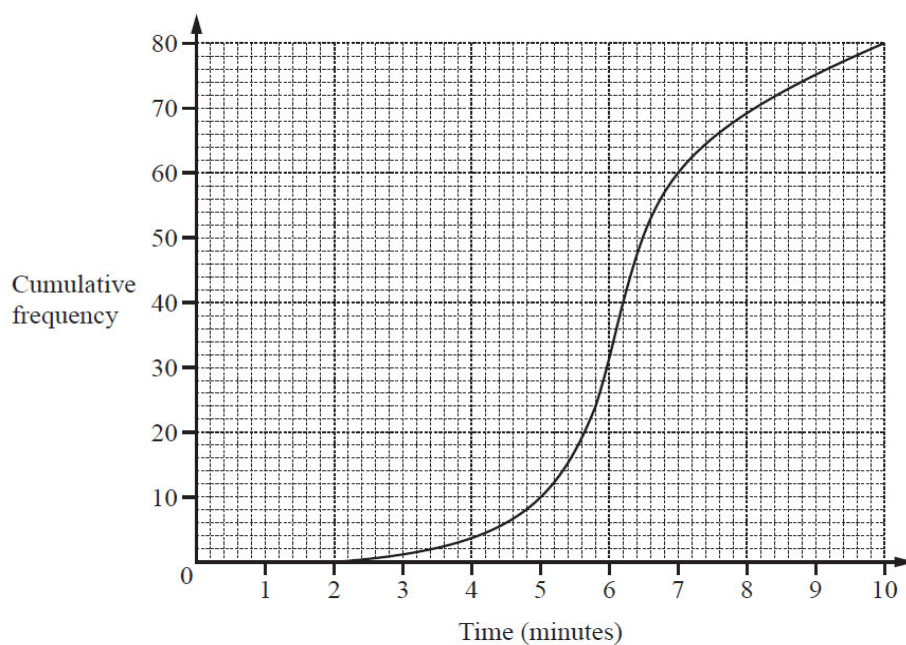
(a) the inter-quartile range, [2]

(b) the 95th percentile, [2]

(c) the number of trees with a trunk diameter greater than 3 metres. [2]



### Question 3



The cumulative frequency diagram shows information about the times, in minutes, taken by 80 students to complete a short test.

Find

(a) the median,

[1]

(b) the 30th percentile,

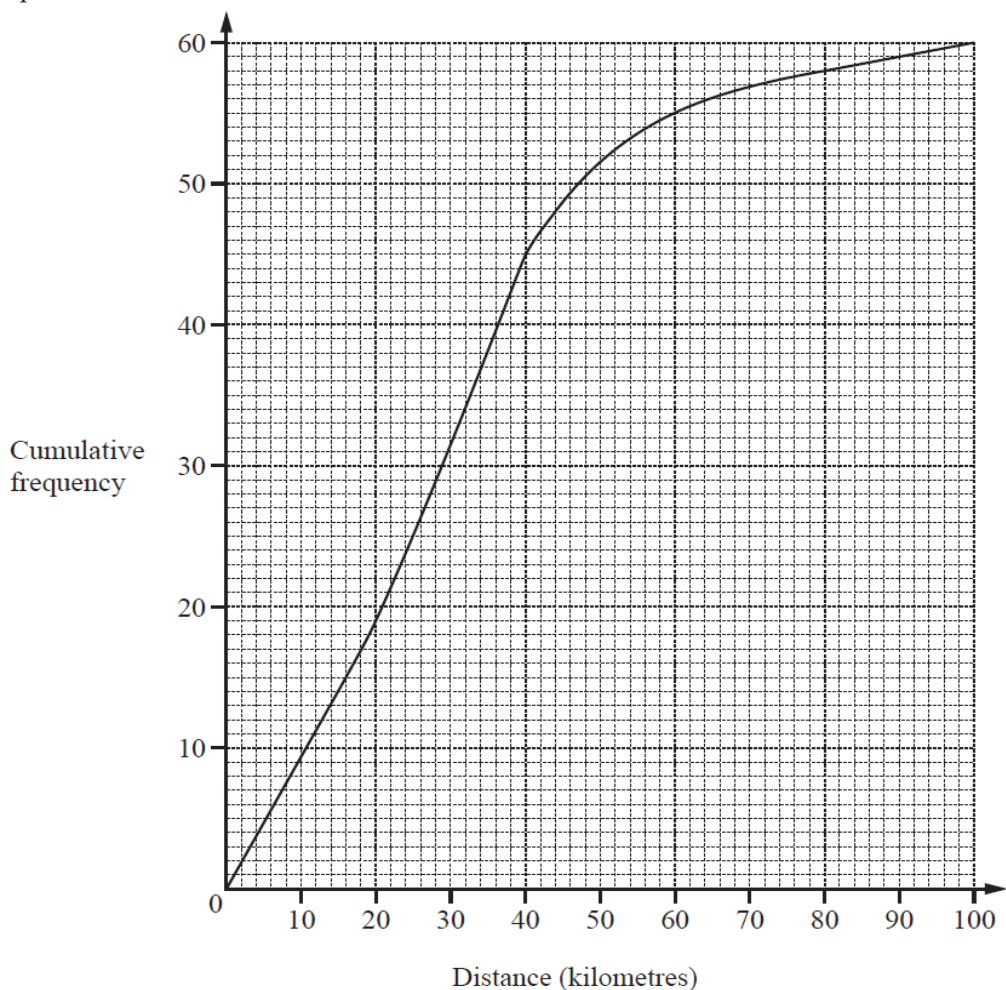
[2]

(c) the number of students taking more than 5 minutes.

[2]

## Question 4

The cumulative frequency diagram shows information about the distances travelled, in kilometres, by 60 people.



Find

(a) the 80th percentile,

[2]

(b) the inter-quartile range,

[2]

(c) the number of people who travelled more than 60 km.

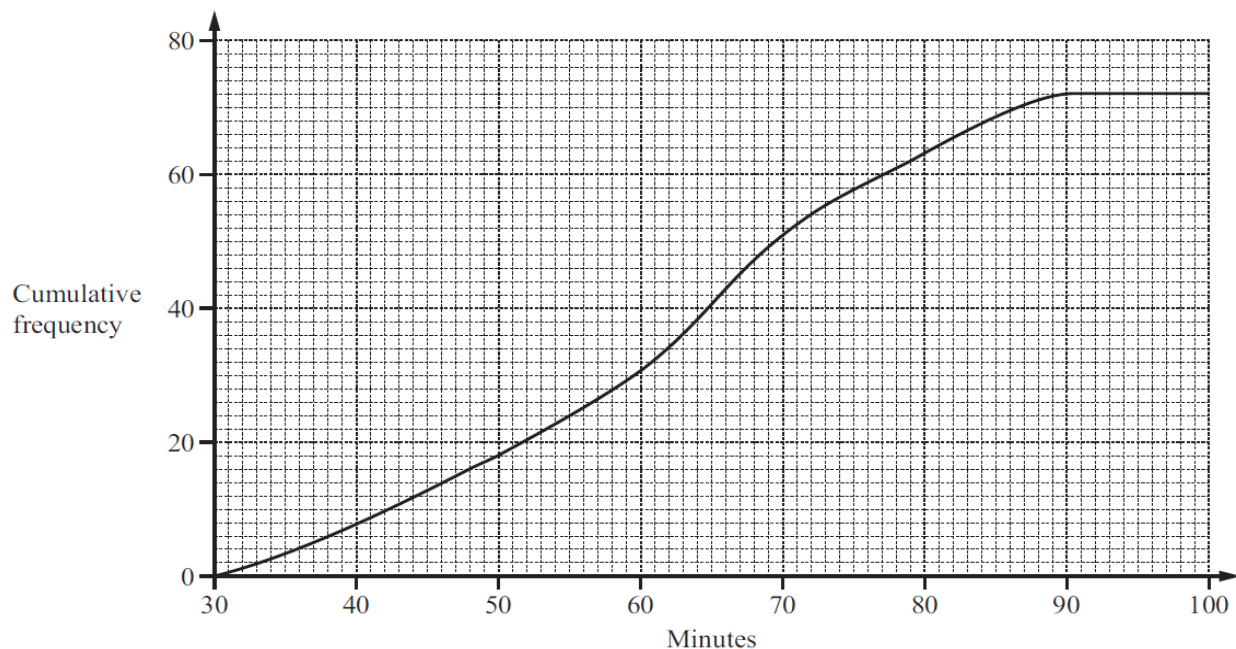
[2]

## Question 5

72 students are given homework one evening.

They are told to spend no more than 100 minutes completing their homework.

The cumulative frequency diagram shows the number of minutes they spend.



(a) How many students spent more than 48 minutes completing their homework?

[2]

(b) Find

(i) the median,

[1]

(ii) the inter-quartile range.

[2]

# Cumulative Frequency

## Difficulty: Easy

### Question Paper 2

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Cumulative Frequency
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 2

**Time allowed:** 28 minutes

**Score:** /22

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

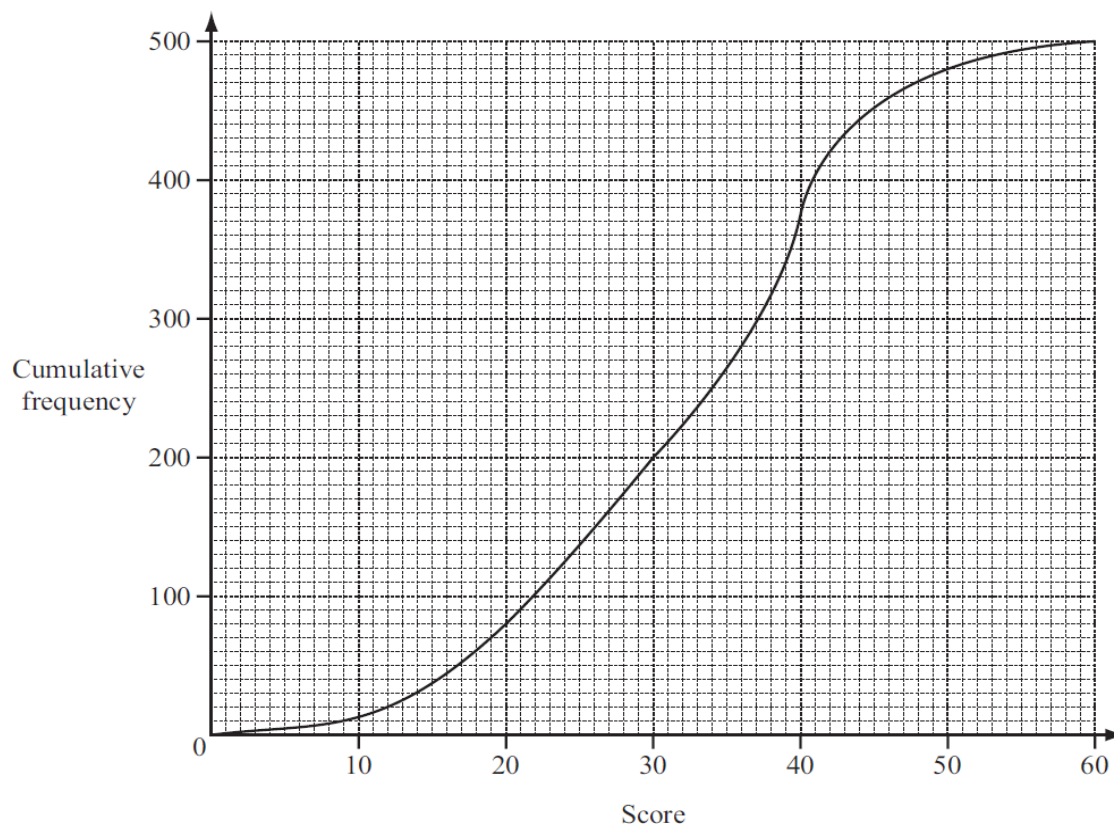
A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

Jenna draws a cumulative frequency diagram to show information about the scores of 500 people in a quiz.



Use the diagram to find

(a) the median score,

[1]

(b) the inter-quartile range,

[2]

(c) the 40th percentile,

[1]

(d) the number of people who scored 30 or less but more than 20.

[1]

## Question 2

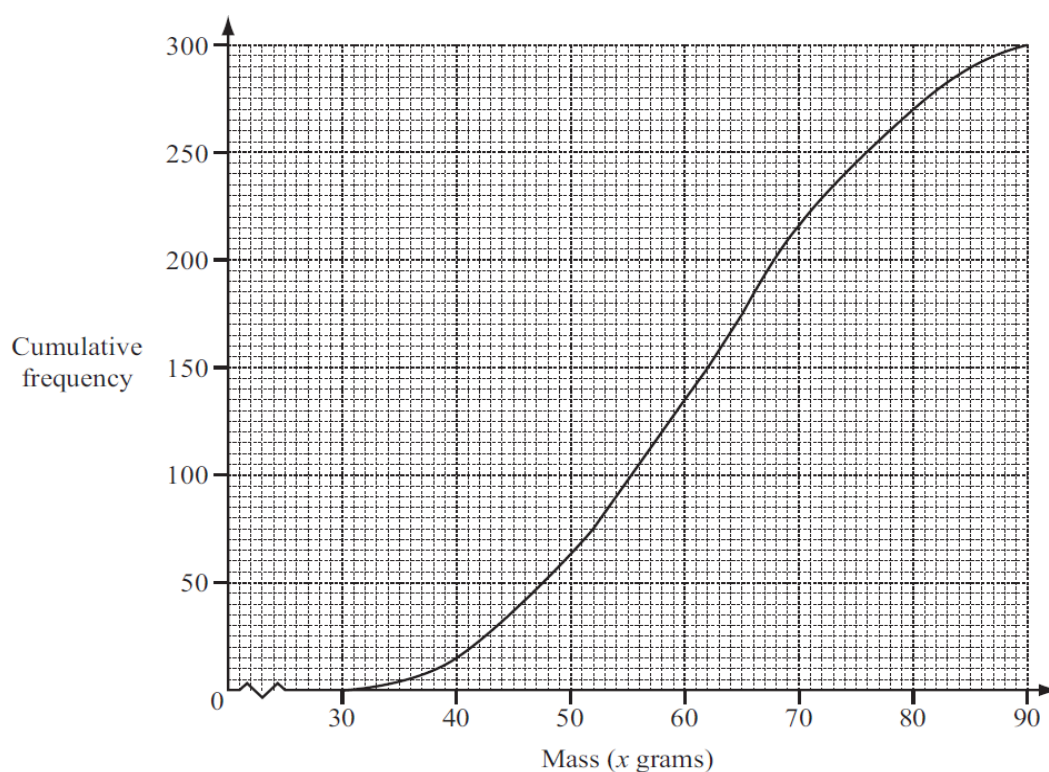
Lauris records the mass and grade of 300 eggs. The table shows the results.

Mass ( $x$ grams)	$30 < x \leq 40$	$40 < x \leq 50$	$50 < x \leq 60$	$60 < x \leq 70$	$70 < x \leq 80$	$80 < x \leq 90$
Frequency	15	48	72	81	54	30
Grade	small		medium	large	very large	

(a) Find the probability that an egg chosen at random is graded very large.

[1]

(b) The cumulative frequency diagram shows the results from the table.



Use the cumulative frequency diagram to find

(i) the median,

[1]

(ii) the lower quartile,

[1]

(iii) the inter-quartile range,

[1]

(iv) the number of eggs with a mass greater than 65 grams.

[2]

### Question 3

Mass of parcel ( $m$ kilograms)	$0 < m \leq 0.5$	$0.5 < m \leq 1.5$	$1.5 < m \leq 3$
Frequency	20	18	9

The table above shows information about parcels in a delivery van.

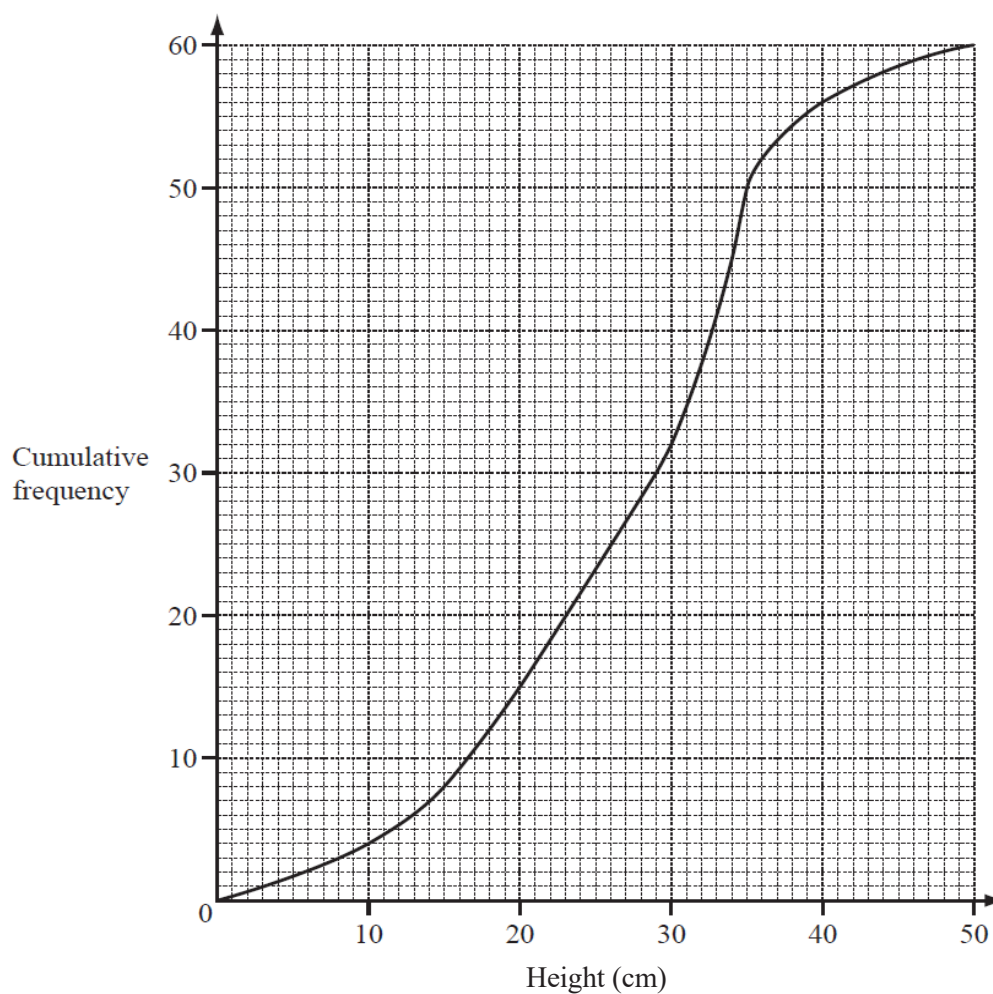
John wants to draw a histogram using this information.

Complete the table below.

Mass of parcel ( $m$ kilograms)	$0 < m \leq 0.5$	$0.5 < m \leq 1.5$	$1.5 < m \leq 3$
Frequency density		18	

[2]

## Question 4



The cumulative frequency diagram shows information about the heights of 60 tomato plants. Use the diagram to find

(a) the median,

[1]

(b) the lower quartile,

[1]

(c) the interquartile range,

[1]

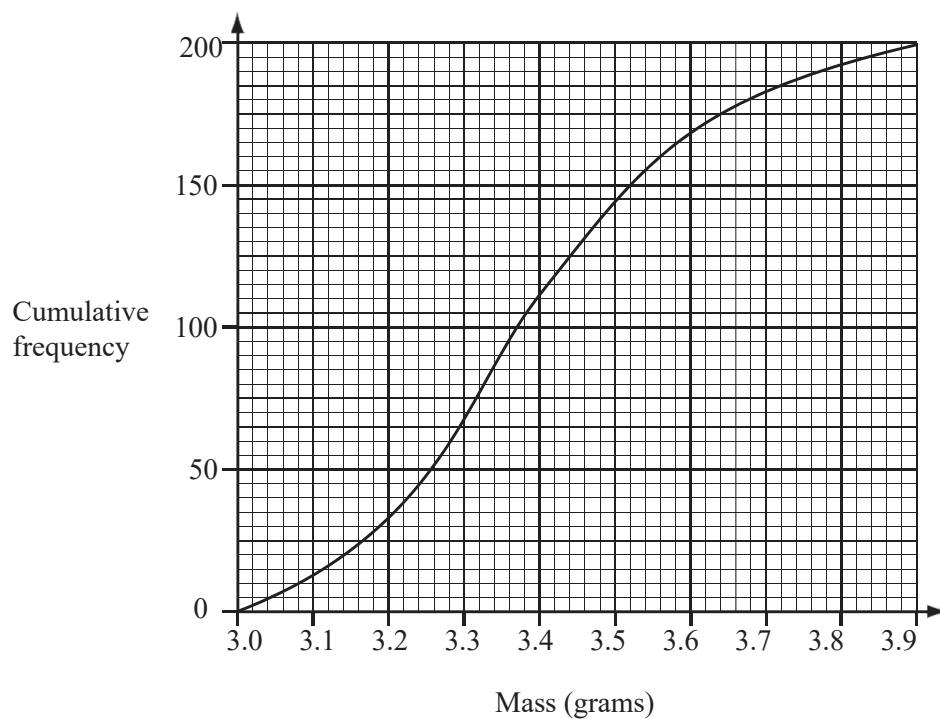
(d) the probability that the height of a tomato plant, chosen at random, will be more than 15 cm.

[2]



## Question 5

The mass of each of 200 tea bags was checked by an inspector in a factory.  
The results are shown by the cumulative frequency curve.



Use the cumulative frequency curve to find

(a) the median mass,

[1]

(b) the interquartile range,

[2]

(c) the number of tea bags with a mass greater than 3.5 grams.

[1]

# Cumulative Frequency

## Difficulty: Hard

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Cumulative Frequency
Paper	Paper 2
Difficulty	Hard
Booklet	Question Paper 1

**Time allowed:** 39 minutes

**Score:** /30

**Percentage:** /100

#### Grade Boundaries:

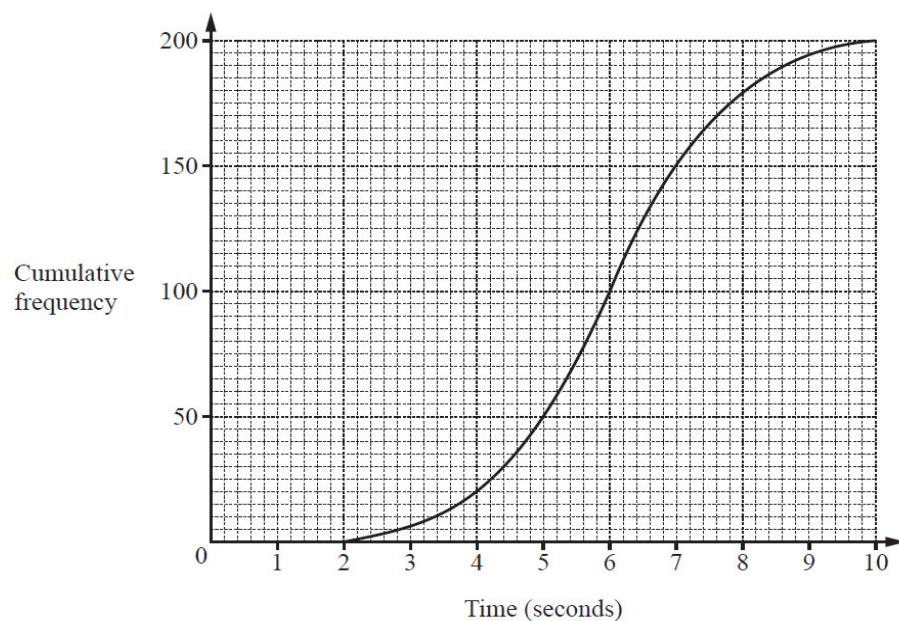
##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1



200 students take a reaction time test.  
The cumulative frequency diagram shows the results.

Find

(a) the median,

[1]

(b) the inter-quartile range,

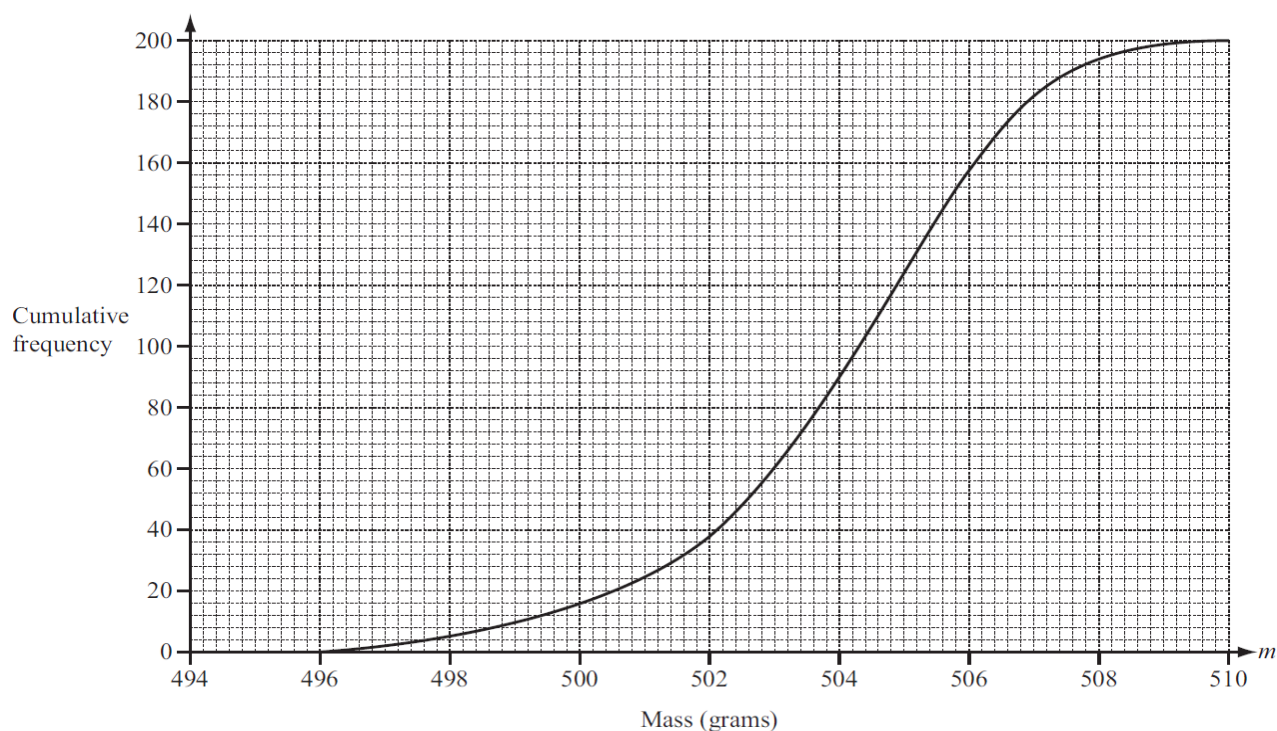
[2]

(c) the number of students with a reaction time of more than 4 seconds.

[2]

## Question 2

The mass,  $m$  grams, of cornflakes in each of 200 boxes is recorded.  
The cumulative frequency diagram shows the results.



(a) Use the diagram to estimate the inter-quartile range. [2]

(b) Find the probability that a box chosen at random has a mass of 500 grams or less. [2]

(c)

Mass ( $m$ grams)	$496 < m \leq 500$	$500 < m \leq 504$	$504 < m \leq 508$	$508 < m \leq 510$
Frequency	16	74	104	6

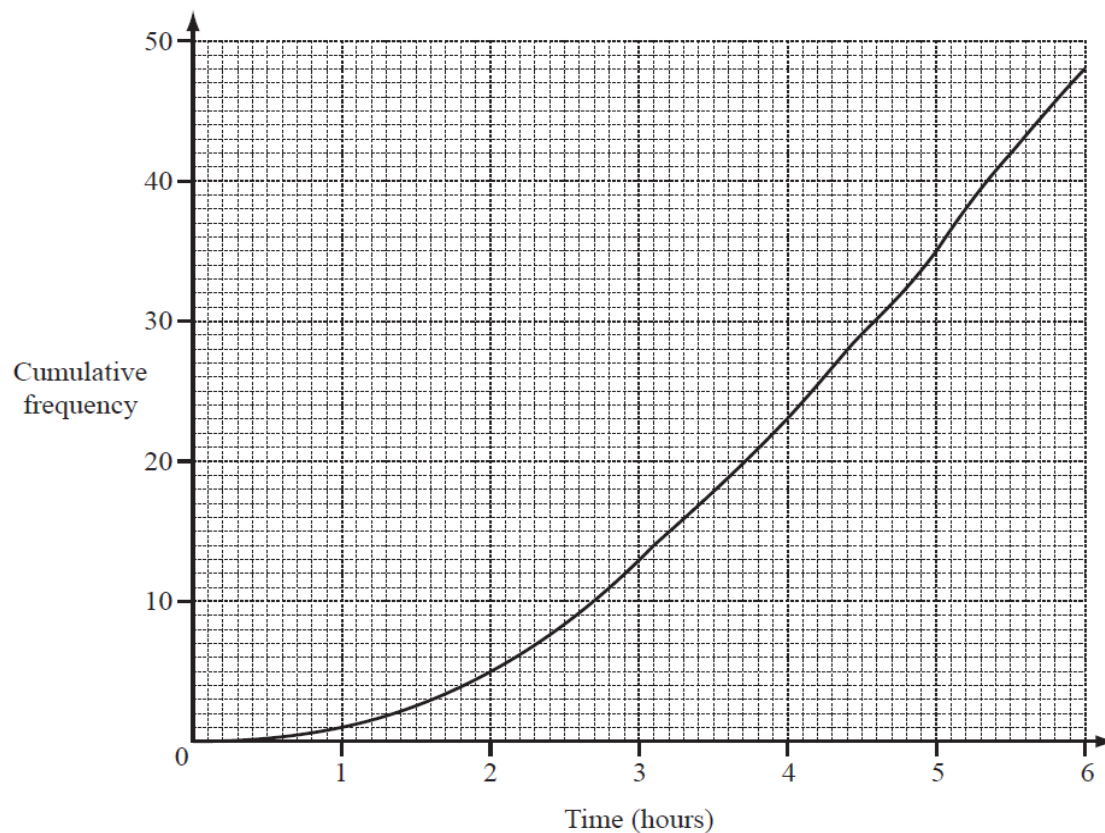
The data in this frequency table is to be shown in a histogram.

Complete the frequency density table below. [2]

Mass ( $m$ grams)	$496 < m \leq 500$	$500 < m \leq 504$	$504 < m \leq 508$	$508 < m \leq 510$
Frequency density	4			

### Question 3

During one day 48 people visited a museum.  
The length of time each person spent in the museum was recorded.  
The results are shown on the cumulative frequency diagram.



Work out

(a) the median, [1]

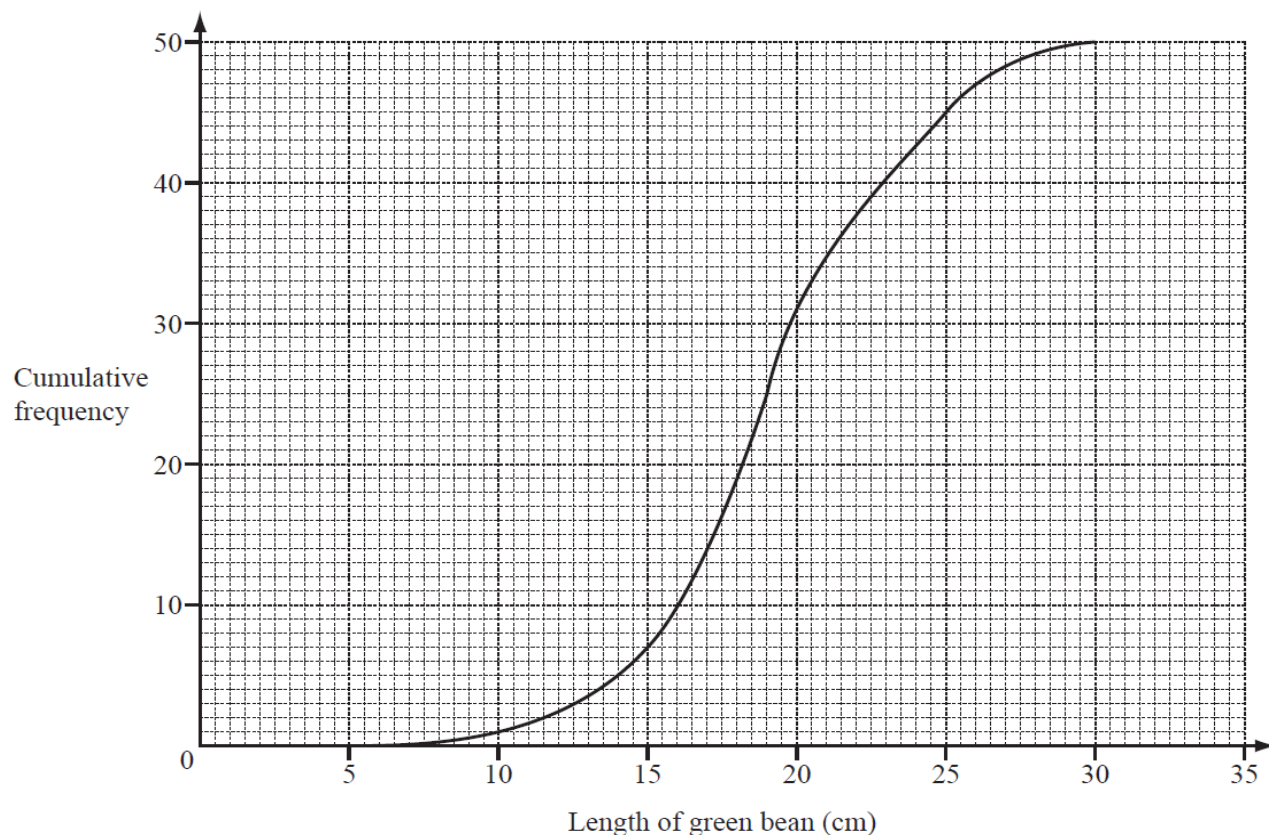
(b) the 20th percentile, [2]

(c) the inter-quartile range, [2]

(d) the probability that a person chosen at random spends 2 hours or less in the museum. [2]

## Question 4

A gardener measured the lengths of 50 green beans from his garden.  
The results have been used to draw this cumulative frequency diagram.



Work out

(a) the median, [1]

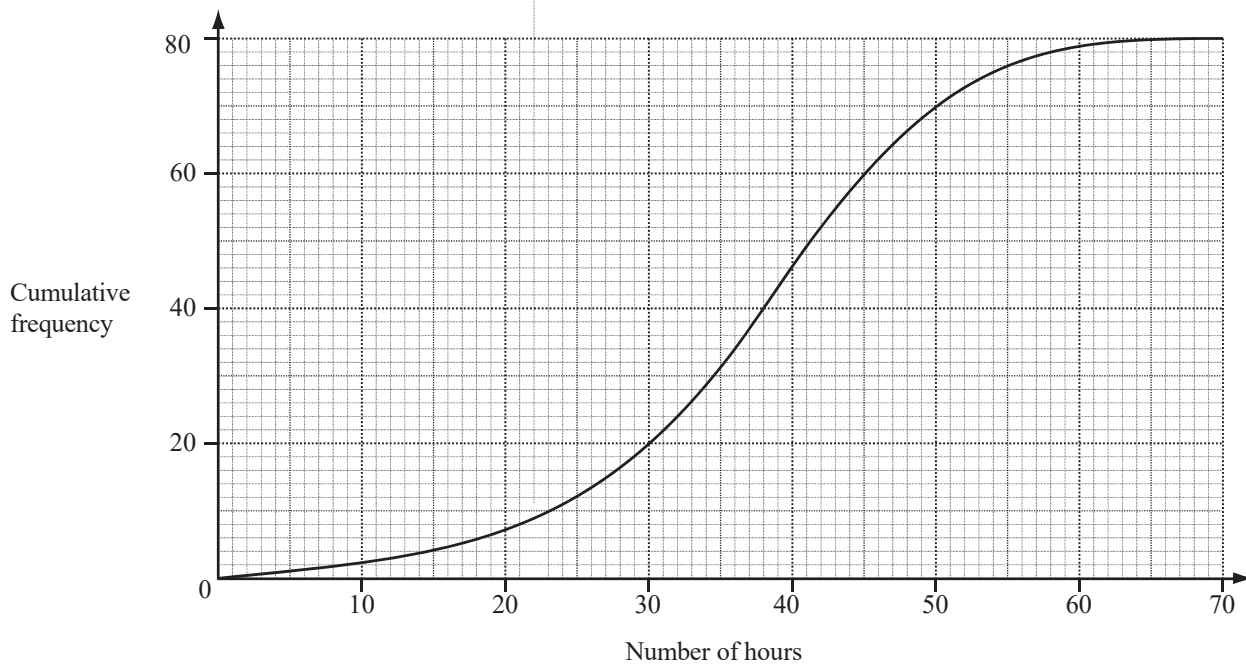
(b) the number of green beans that are longer than 26 cm, [2]

(c) the inter-quartile range, [2]

(d) the probability that a green bean chosen at random is more than 14 cm long. [2]

## Question 5

The number of hours that a group of 80 students spent using a computer in a week was recorded. The results are shown by the cumulative frequency curve.



Use the cumulative frequency curve to find

(a) the median,

[1]

(b) the upper quartile,

[1]

(c) the interquartile range,

[1]

(d) the number of students who spent more than 50 hours using a computer in a week.

[2]

# Correlation

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Statistics
Sub-Topic	Correlation
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 15 minutes

**Score:** /12

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%



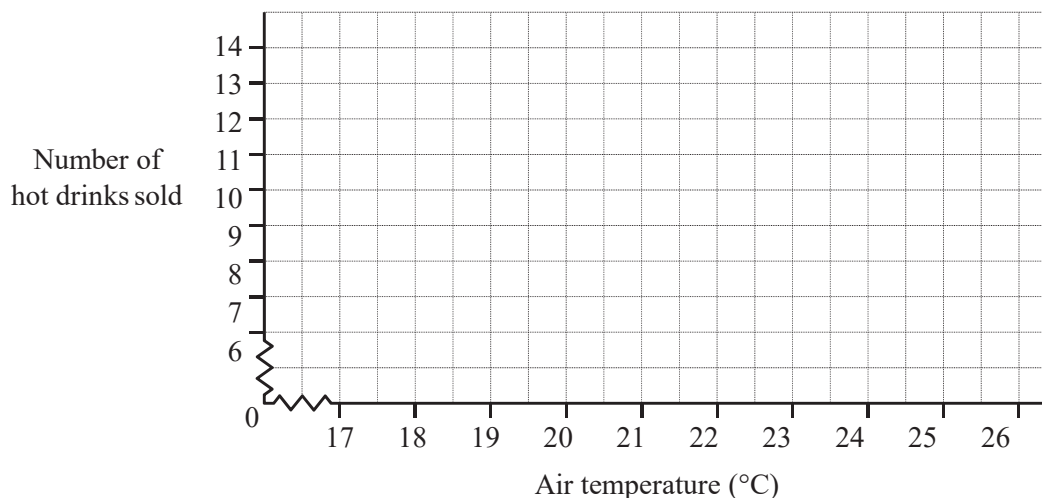
## Question 1

The owner of a small café records the average air temperature and the number of hot drinks he sells each day for a week.

Air temperature ( $^{\circ}\text{C}$ )	18	23	19	23	24	25	20
Number of hot drinks sold	12	8	13	10	9	7	12

(a) On the grid, draw a scatter diagram to show this information.

[2]



(b) What type of correlation does your scatter diagram show?

[1]

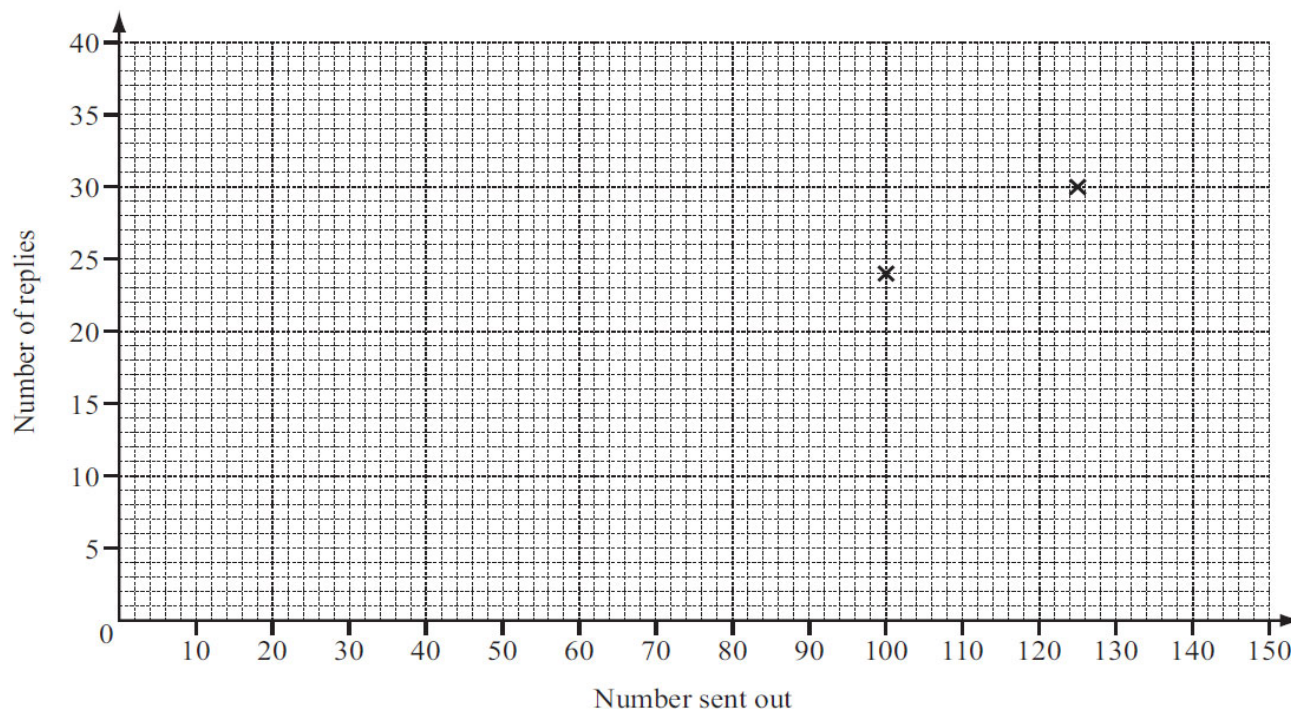
(c) Draw a line of best fit on the grid

[1]

## Question 2

A company sends out ten different questionnaires to its customers.  
The table shows the number sent and replies received for each questionnaire.

Questionnaire	A	B	C	D	E	F	G	H	I	J
Number sent out	100	125	150	140	70	105	100	90	120	130
Number of replies	24	30	35	34	15	25	22	21	30	31



- (a) Complete the scatter diagram for these results.  
The first two points have been plotted for you.

[2]

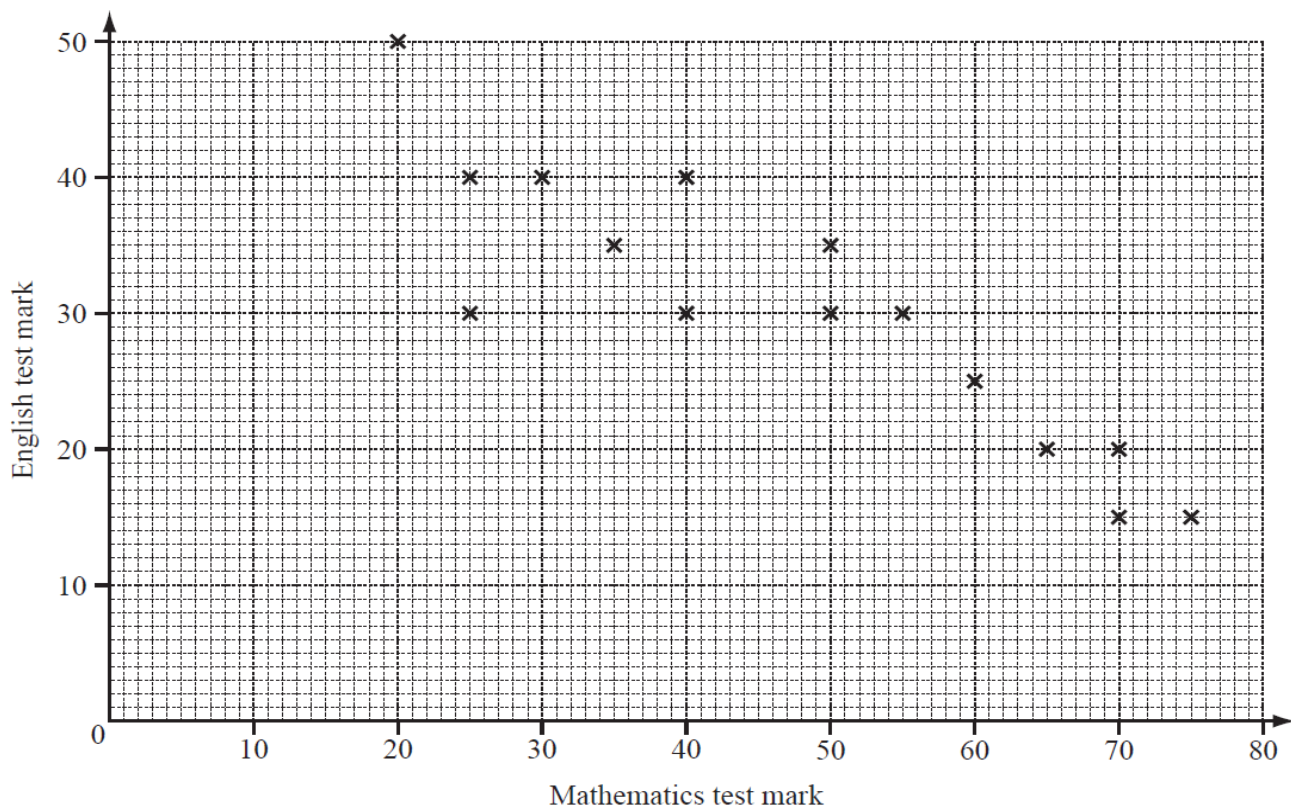
- (b) Describe the correlation between the two sets of data.

[1]

- (c) Draw the line of best fit.

[1]

### Question 3



The scatter diagram shows the marks obtained in a Mathematics test and the marks obtained in an English test by 15 students.

(a) Describe the correlation. [1]

(b) The mean for the Mathematics test is 47.3 .  
The mean for the English test is 30.3 .

Plot the mean point (47.3, 30.3) on the scatter diagram above. [1]

(c) (i) Draw the line of best fit on the diagram above. [1]

(ii) One student missed the English test.  
She received 45 marks in the Mathematics test.

Use your line to estimate the mark she might have gained in the English test. [1]