Extended Mathematics
Topic : Statistics
Year :May 2013 -May 2024
Paper -2
Questions Booklet

Question 1

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

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

(a) Find the interval which contains the median height.

Answer(a) ..... [1]

(b) Calculate an estimate of the mean height.

Answer(b) ..... m [4]

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

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

[2]

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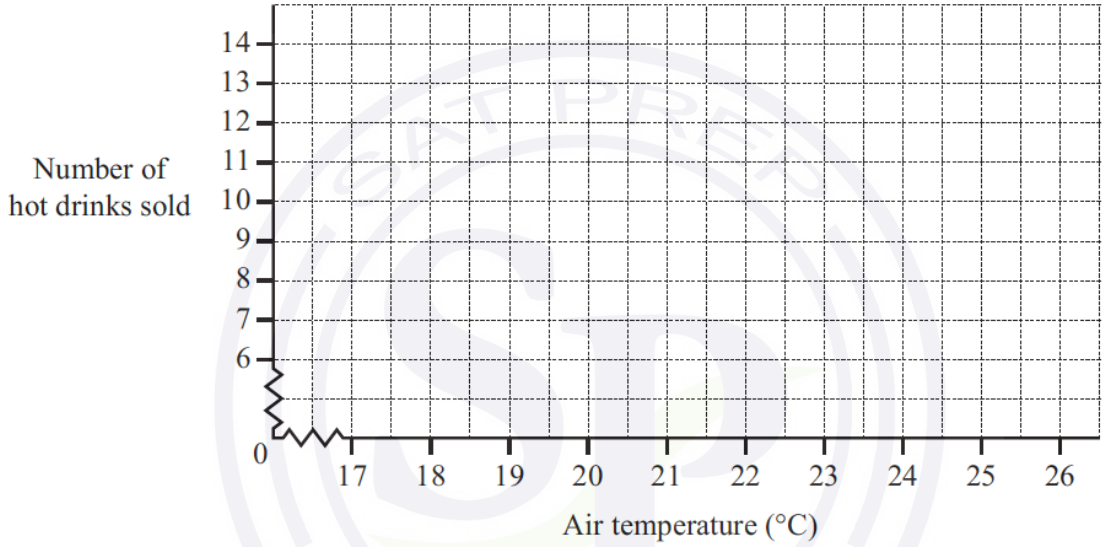
Question 2

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 (°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]

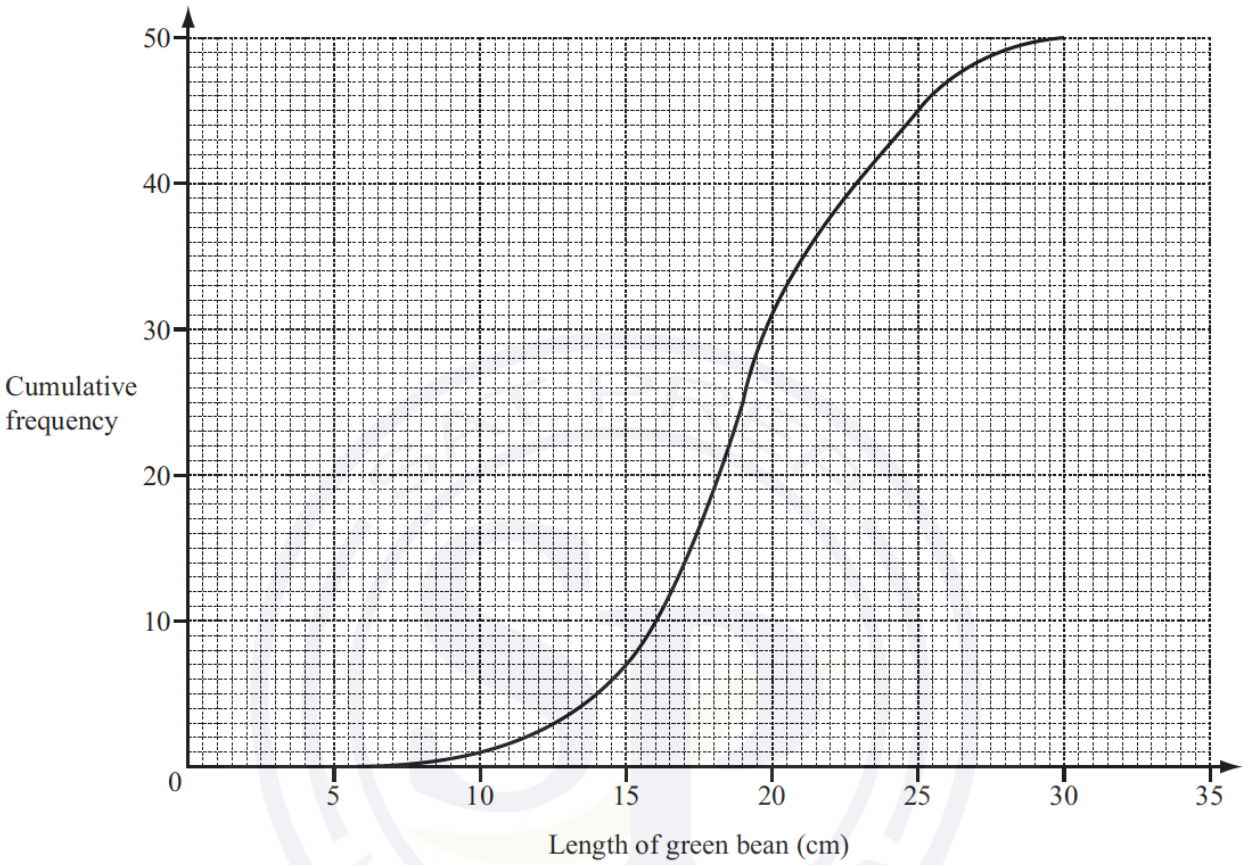
(b) What type of correlation does your scatter diagram show?

Answer(b) ..... [1]

(c) Draw a line of best fit on the grid. [1]

Question 3

18 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,

Answer(a) ..... cm [1]

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

Answer(b) ..... [2]

(c) the inter-quartile range,

Answer(c) ..... cm [2]

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

Answer(d) ..... [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

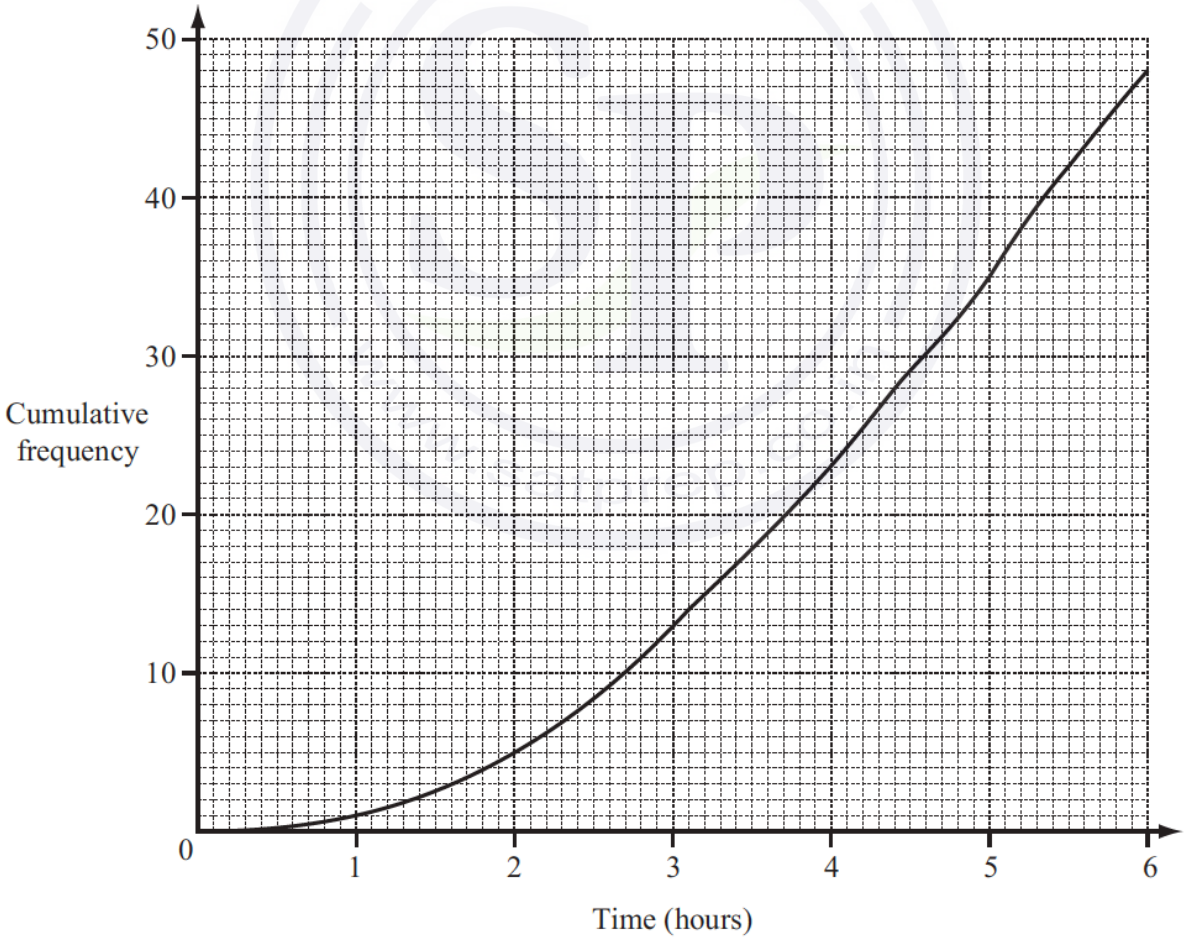
The information is to be shown in a pie chart.

Calculate the sector angle for the score of 4.

Answer ..... [2]

Question 5

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.



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Work out

(a) the median,

Answer(a) ..... h [1]

(b) the 20th percentile,

Answer(b) ..... h [2]

(c) the inter-quartile range,

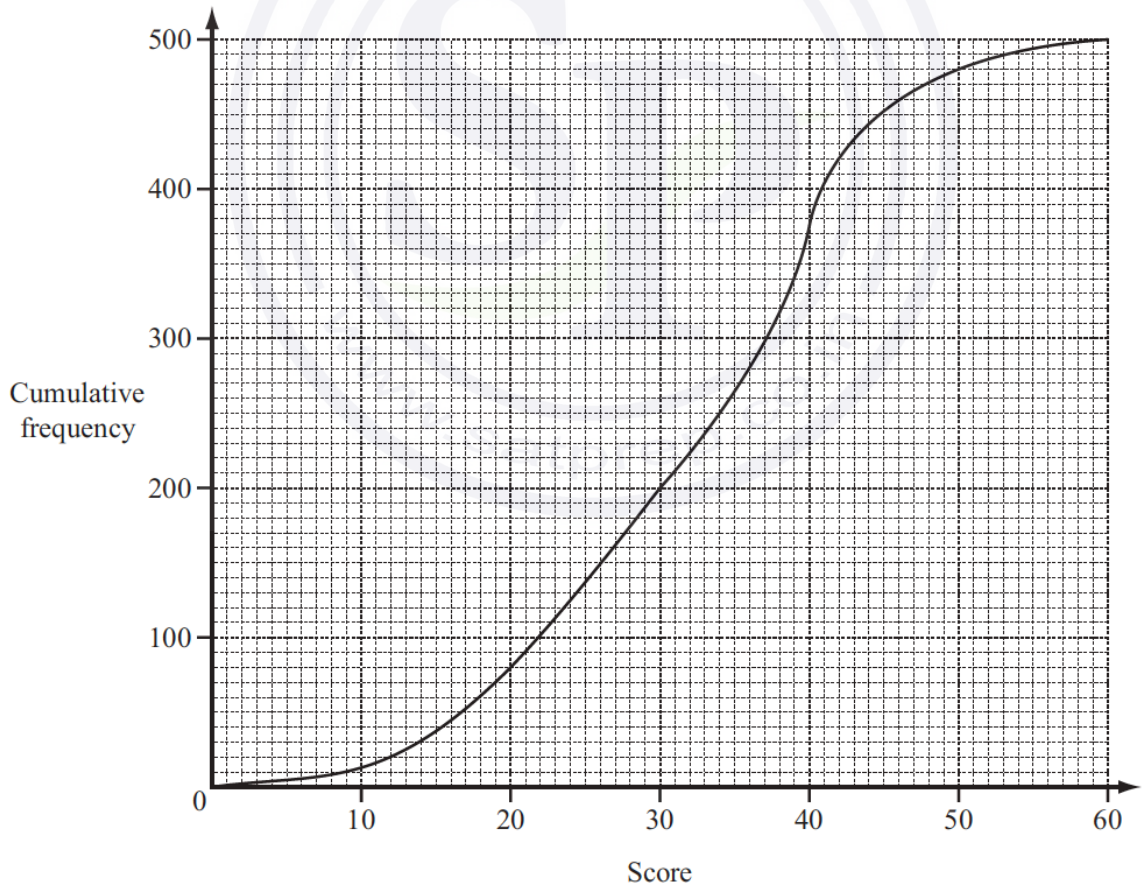
Answer(c) ..... h [2]

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

Answer(d) ..... [2]

Question 6

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



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Use the diagram to find

(a) the median score,

Answer(a) ..... [1]

(b) the inter-quartile range,

Answer(b) ..... [2]

(c) the 40th percentile,

Answer(c) ..... [1]

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

Answer(d) ..... [1]

Question 7

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

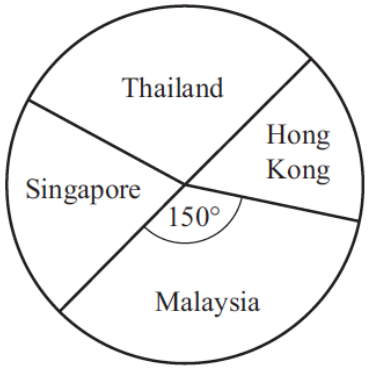
Flavour	Vanilla	Strawberry	Chocolate	Mango
Number sold	6	8	9	7

Michelle wants to show this information in a pie chart.

Calculate the sector angle for mango.

Answer ..... [2]

Question 8



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A travel brochure has 72 holidays in four different countries.
The pie chart shows this information.

(a) There are 24 holidays in Thailand.

Show that the sector angle for Thailand is 120°.

Answer(a)

(b) The sector angle for Malaysia is 150°.
The sector angle for Singapore is twice the sector angle for Hong Kong.

Calculate the number of holidays in Hong Kong.

Answer(b) ..... [3]

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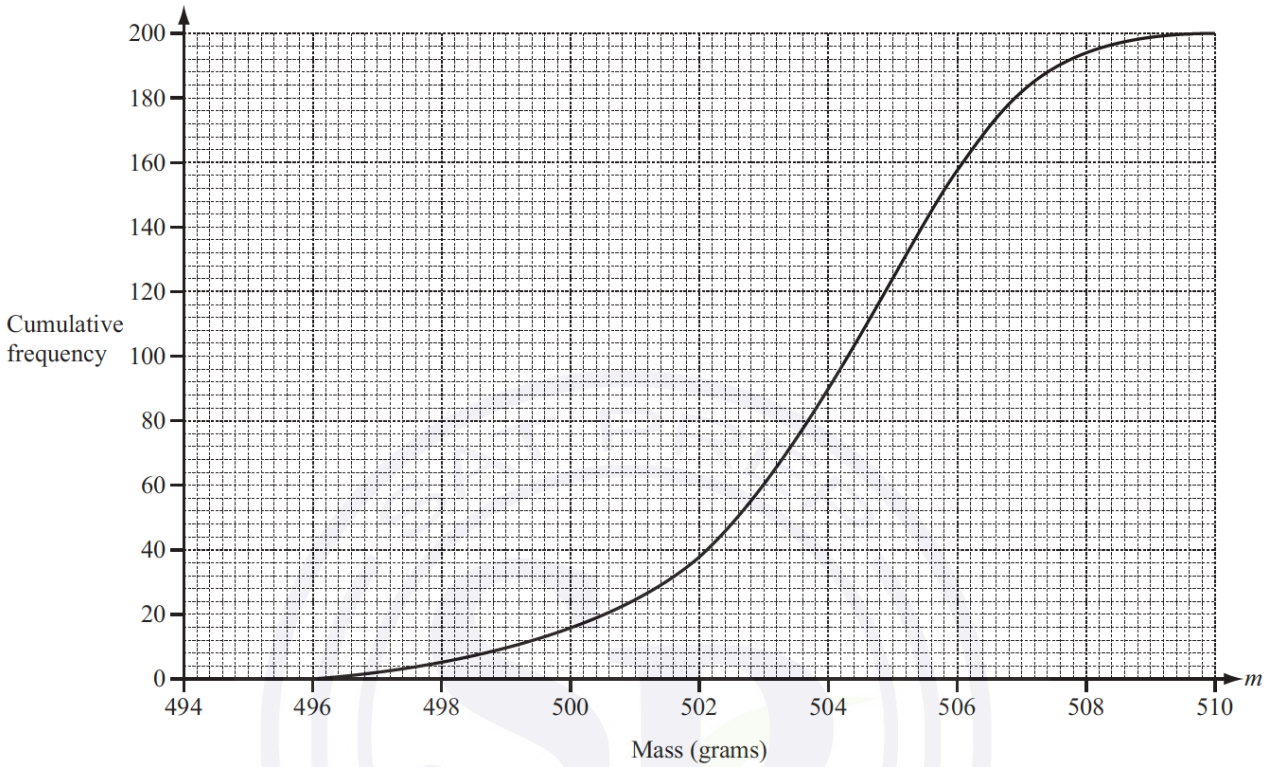
Question 9

17 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.

Answer(a) ..... g [2]

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

Answer(b) ..... [2]

(c)

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

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

Complete the frequency density table below.

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

[2]

Question 10

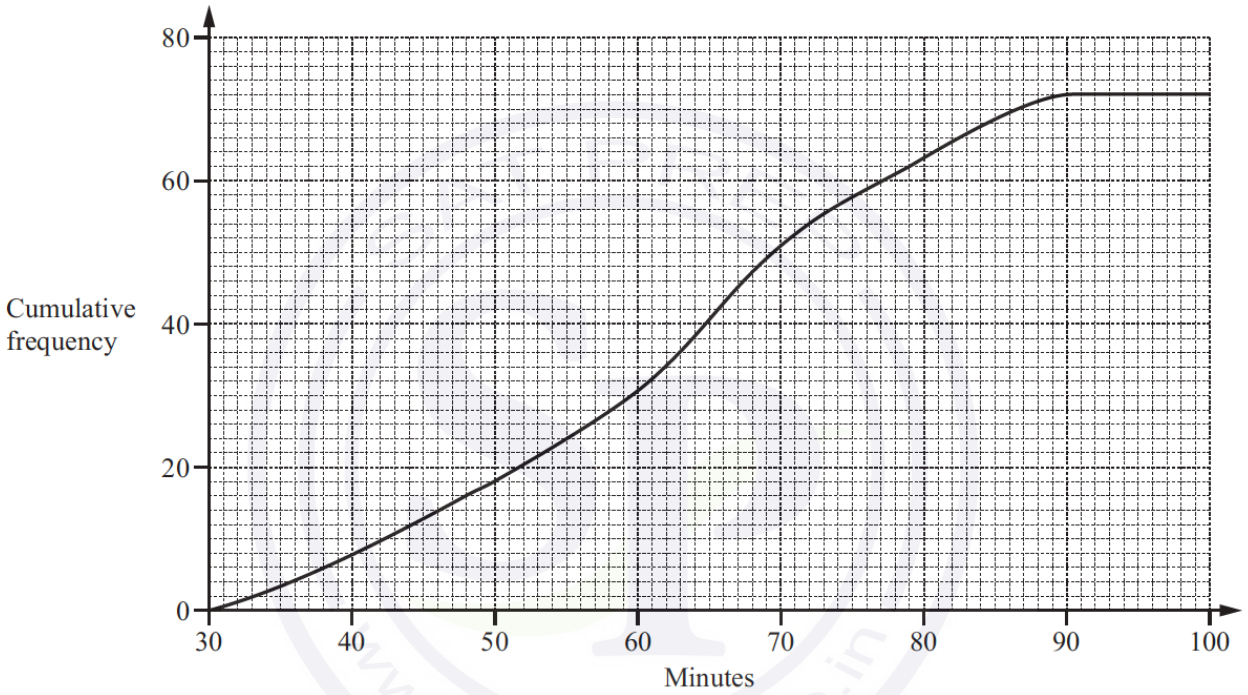
The four sector angles in a pie chart are $2x°$, $3x°$, $4x°$ and $90°$.

Find the value of x.

Answer x = ... [2]

Question 11

18 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?

Answer(a) ..... [2]

(b) Find

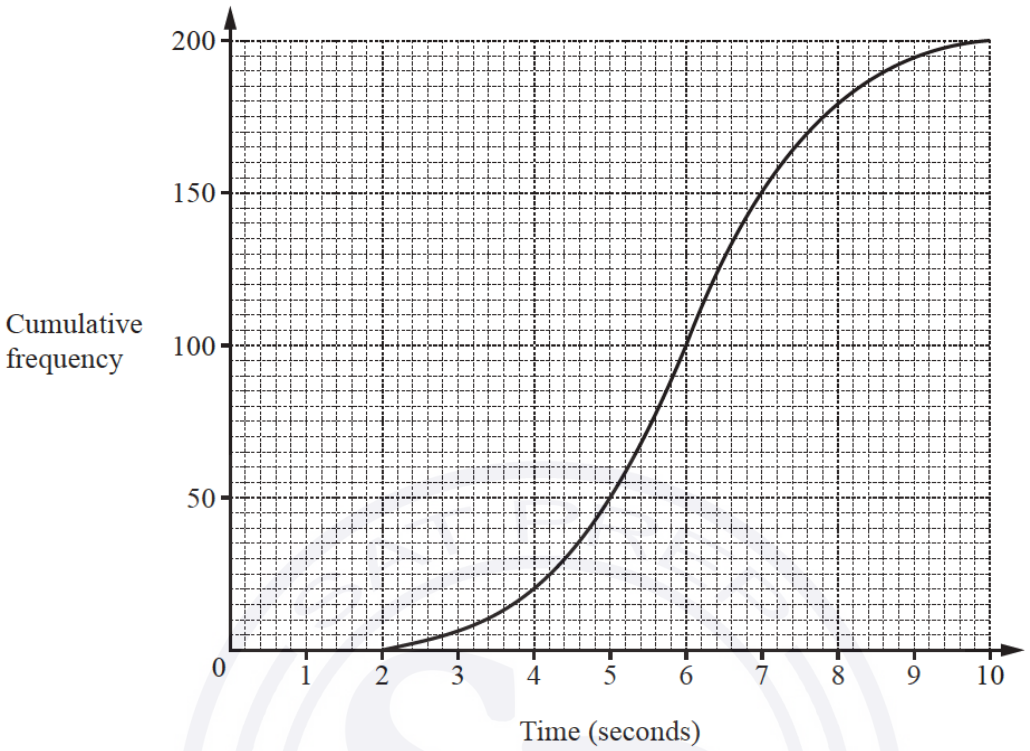
(i) the median,

Answer(b)(i) ..... [1]

(ii) the inter-quartile range.

Answer(b)(ii) ..... [2]

Question 12



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

(a) the median,

Answer(a) ..... s [1]

(b) the inter-quartile range,

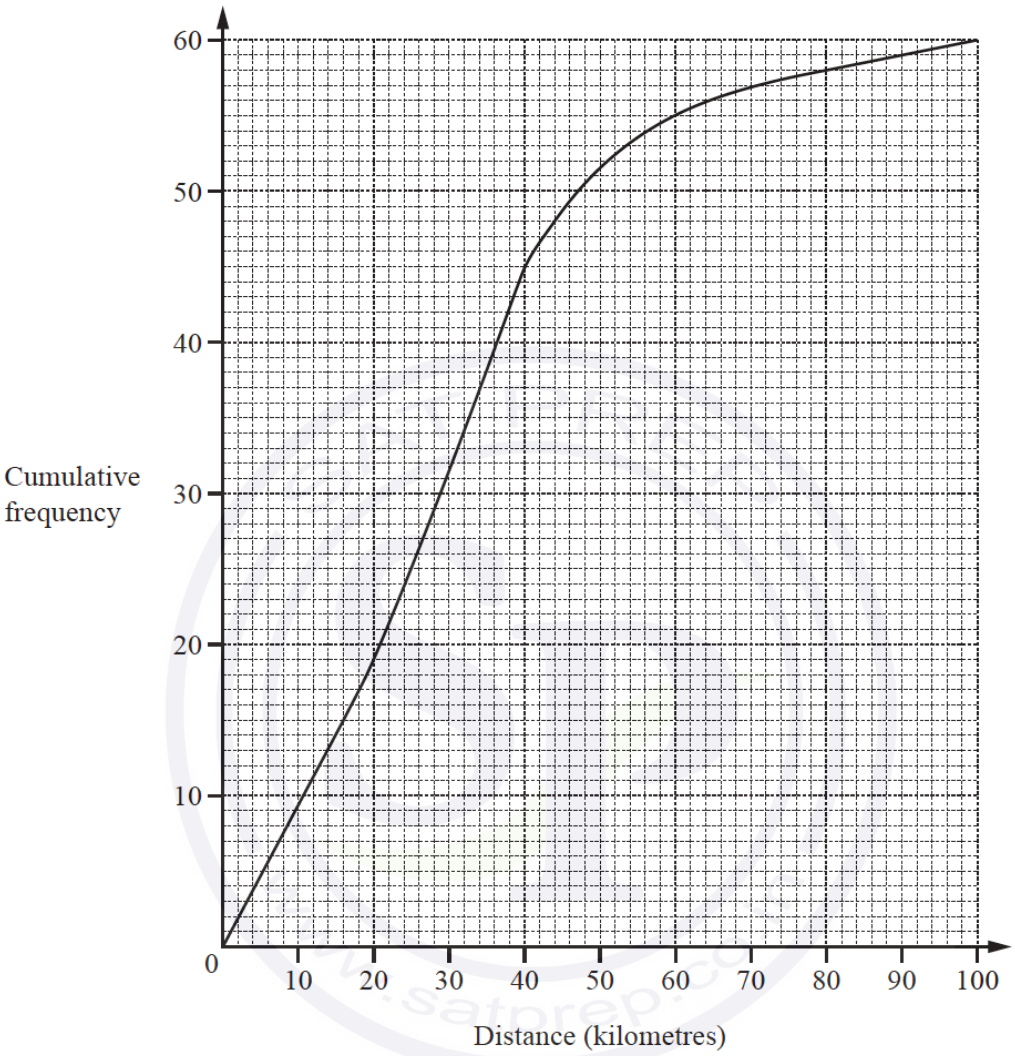
Answer(b) ..... s [2]

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

Answer(c) ..... [2]

Question 13

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



Find

(a) the 80th percentile,

Answer(a) ..... km [2]

(b) the inter-quartile range,

Answer(b) ..... km [2]

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

Answer(c) ..... [2]

Question 14

7 9 20 3 9

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

Write down this number.

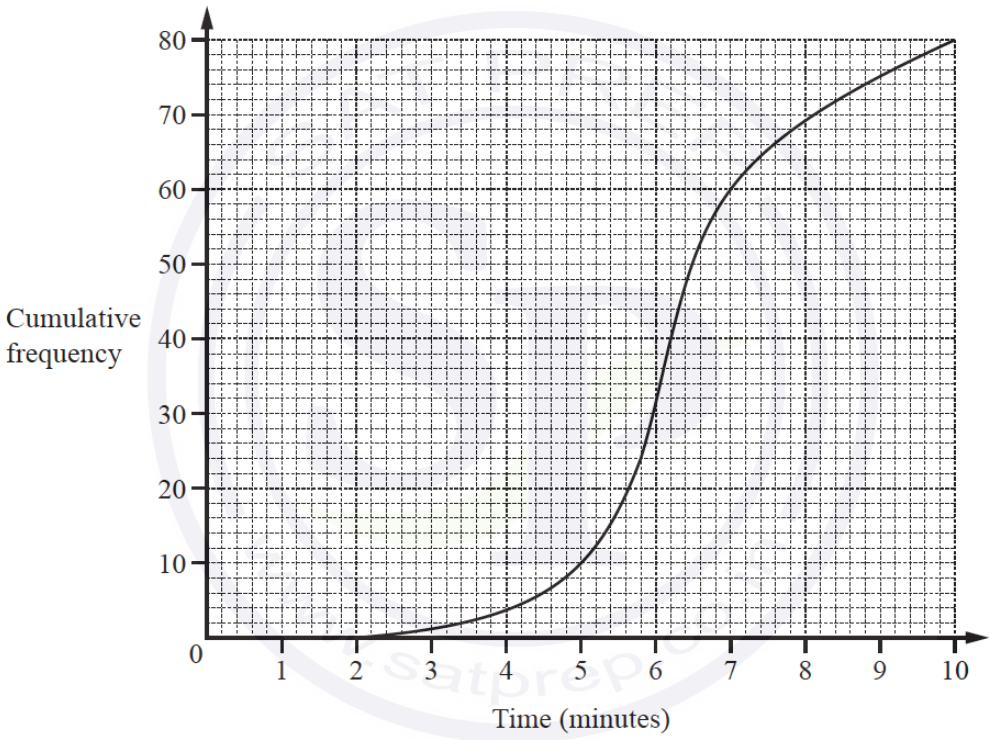
Answer(a) ..... [1]

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

Write down a possible value for this number.

Answer(b) ..... [1]

Question 15



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

Find

(a) the median,

Answer(a) ..... min [1]

(b) the 30th percentile,

Answer(b) ..... min [2]

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

Answer(c) ..... [2]

Question 16

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.

Answer(a) ..... [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.

Answer(b) ..... [3]

Question 17

Jim scores the following marks in 8 tests.

7 8 8 y 6 9 10 5

His mean mark is 7.5 .

Calculate the value of y.

Answer y = ... [2]

Question 18

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

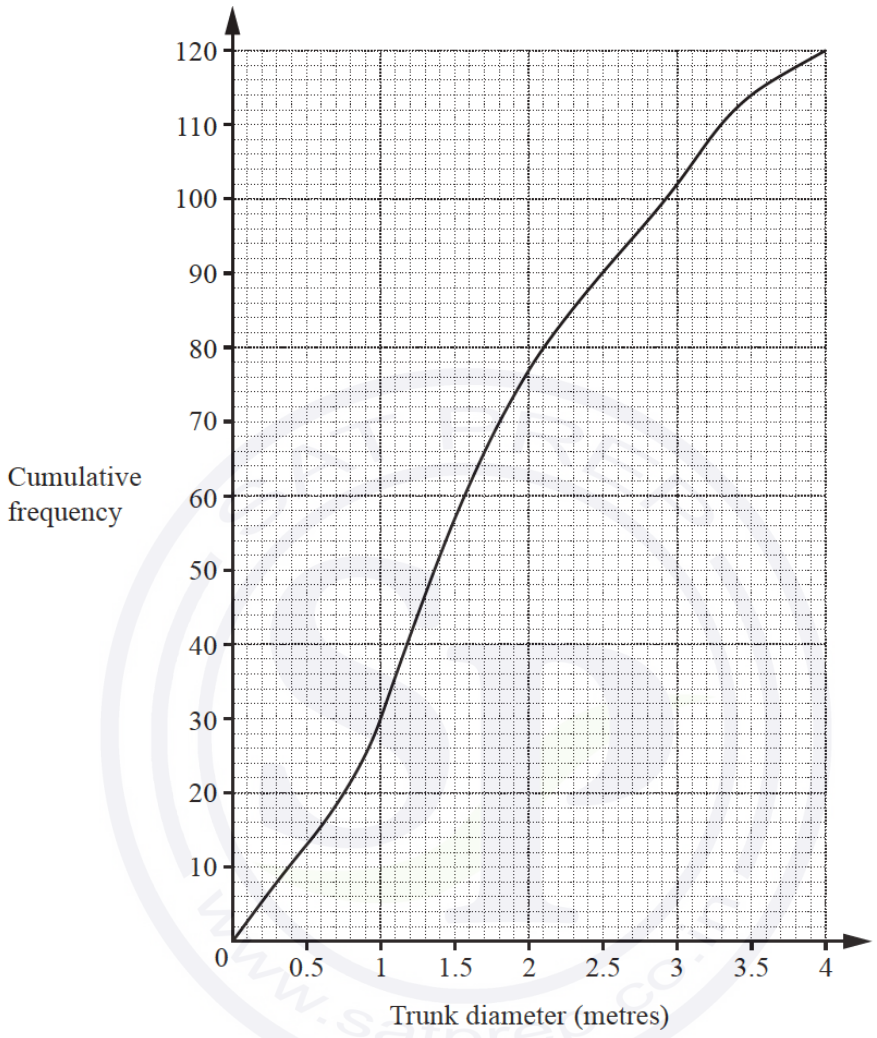
Height (h cm)	$10 < h \leqslant 20$	$20 < h \leqslant 40$	$40 < h \leqslant 50$	$50 < h \leqslant 60$	$60 < h \leqslant 90$
Frequency	7	15	27	13	8

Calculate an estimate of the mean height of the plants.

..... cm [4]

Question 19

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



Find

(a) the inter-quartile range,

.....m [2]

(b) the 95th percentile,

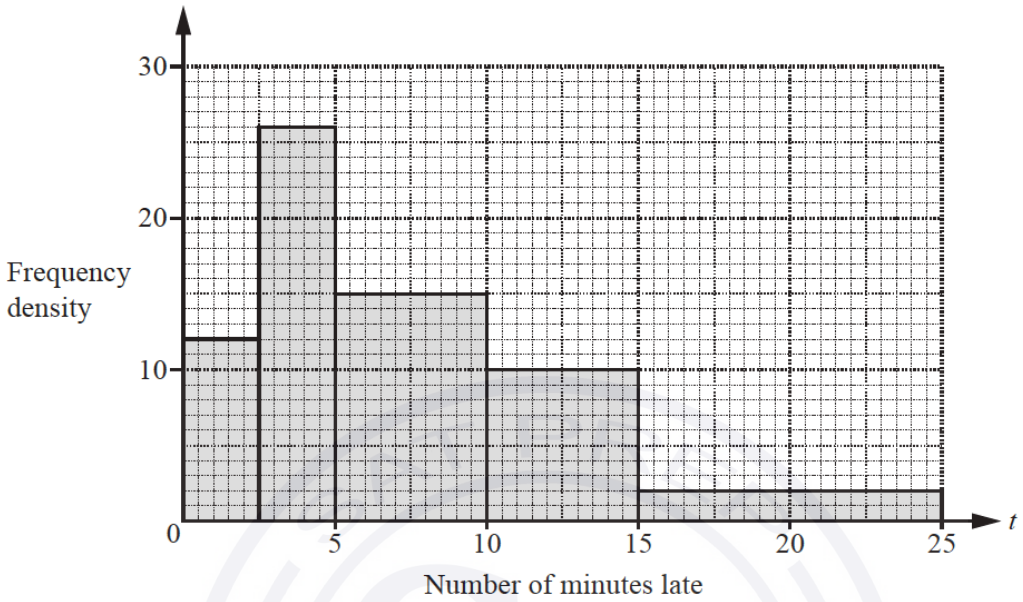
.....m [2]

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

.....[2]

Question 20

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 21

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 22

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

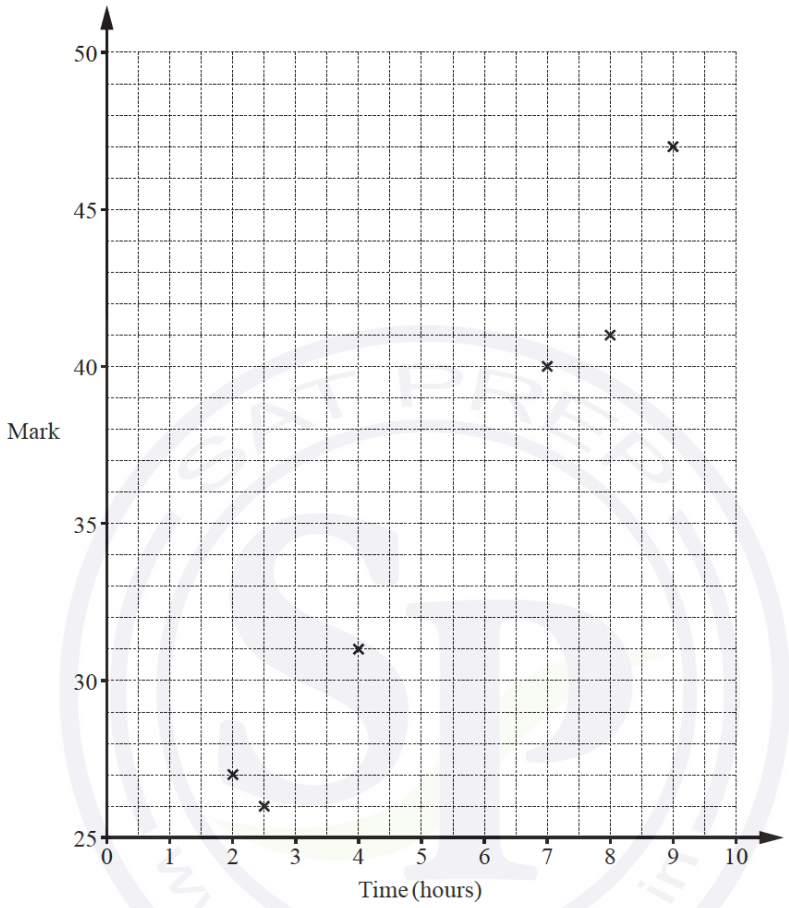
Mass (m grams)	$90 < m \leqslant 110$	$110 < m \leqslant 120$	$120 < m \leqslant 125$	$125 < m \leqslant 140$
Frequency	40	70	60	30
Height of column in histogram (cm)			6	

Complete the table.

[4]

Question 23

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]

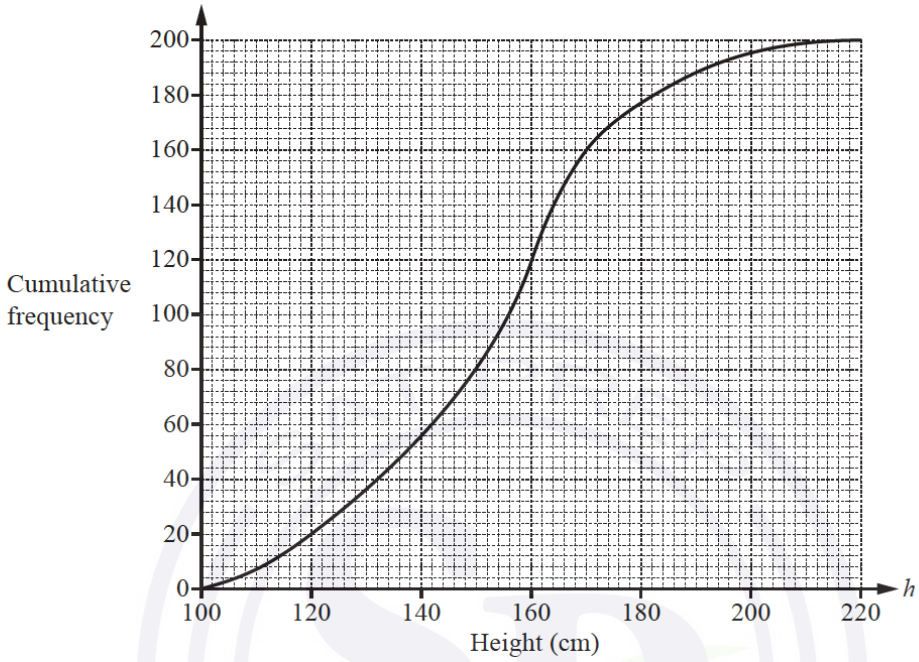
(c) Draw a line of best fit on the scatter diagram. [1]

(d) Another student spent 5.5 hours revising.

Estimate a mark for this student.

Question 24

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.

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

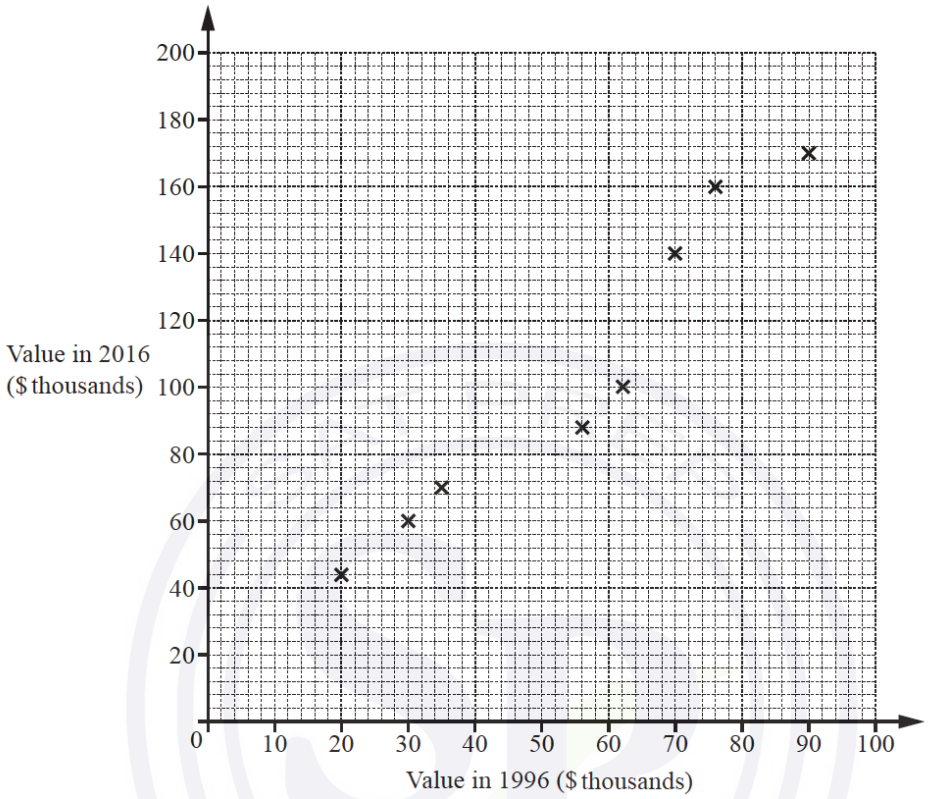
On the grid above, draw another cumulative frequency diagram to show this information. [3]

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

..... cm [2]

Question 25

The scatter diagram shows the value, in thousands of dollars, of eight houses in 1996 and the value of the same houses in 2016.



(a) One of these eight houses had a value of $70 000 in 1996.

Write down the value of this house in 2016.

$ ..... [1]

(b) The values of two more houses are shown in the table.

Value in 1996 ($ thousands)	40	80
Value in 2016 ($ thousands)	80	150

On the scatter diagram, plot these values. [1]

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

(d) Another house had a value of $50 000 in 1996.

Find an estimate of the value of this house in 2016.

$ ..... [1]

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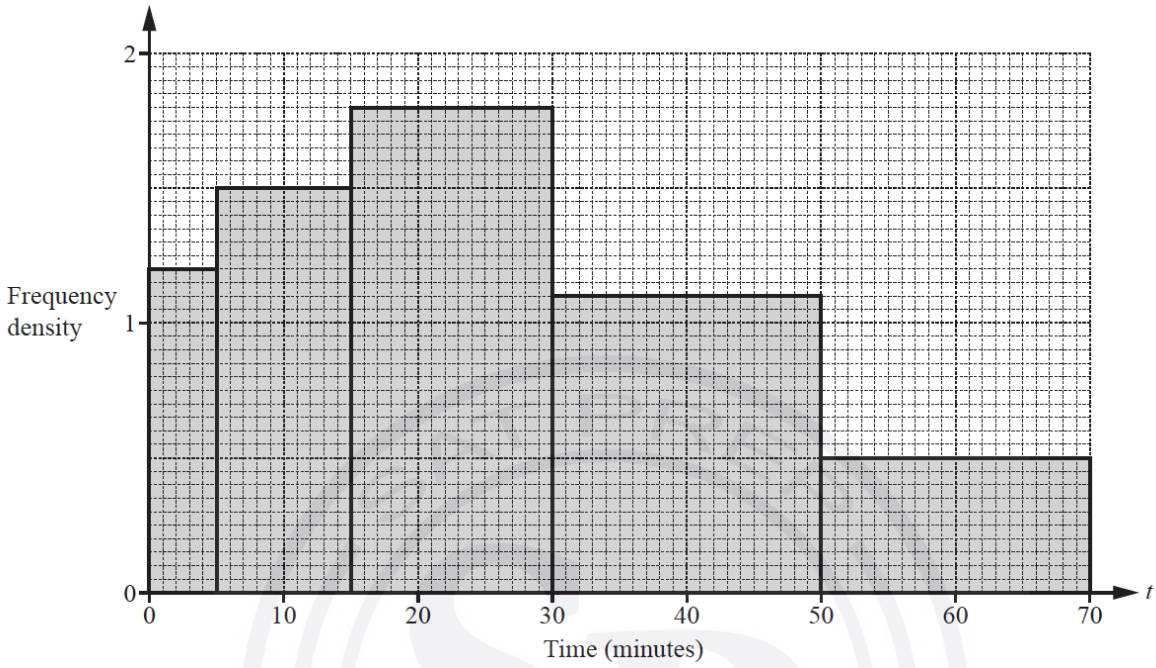
Question 26

The histogram shows information about the time, t minutes, spent in a shop by each of 80 people.



Complete the frequency table.

Time (t minutes)	$0 < t \leqslant 5$	$5 < t \leqslant 15$	$15 < t \leqslant 30$	$30 < t \leqslant 50$	$50 < t \leqslant 70$
Number of people	6		27		10

[2]

Question 27

40 people were asked how many times they visited the cinema in one month.
The table shows the results.

Number of cinema visits	0	1	2	3	4	5	6	7
Frequency	5	5	6	6	7	3	6	2

(a) **(i)** Find the mode.

..... [1]

(ii) Calculate the mean.

..... [3]

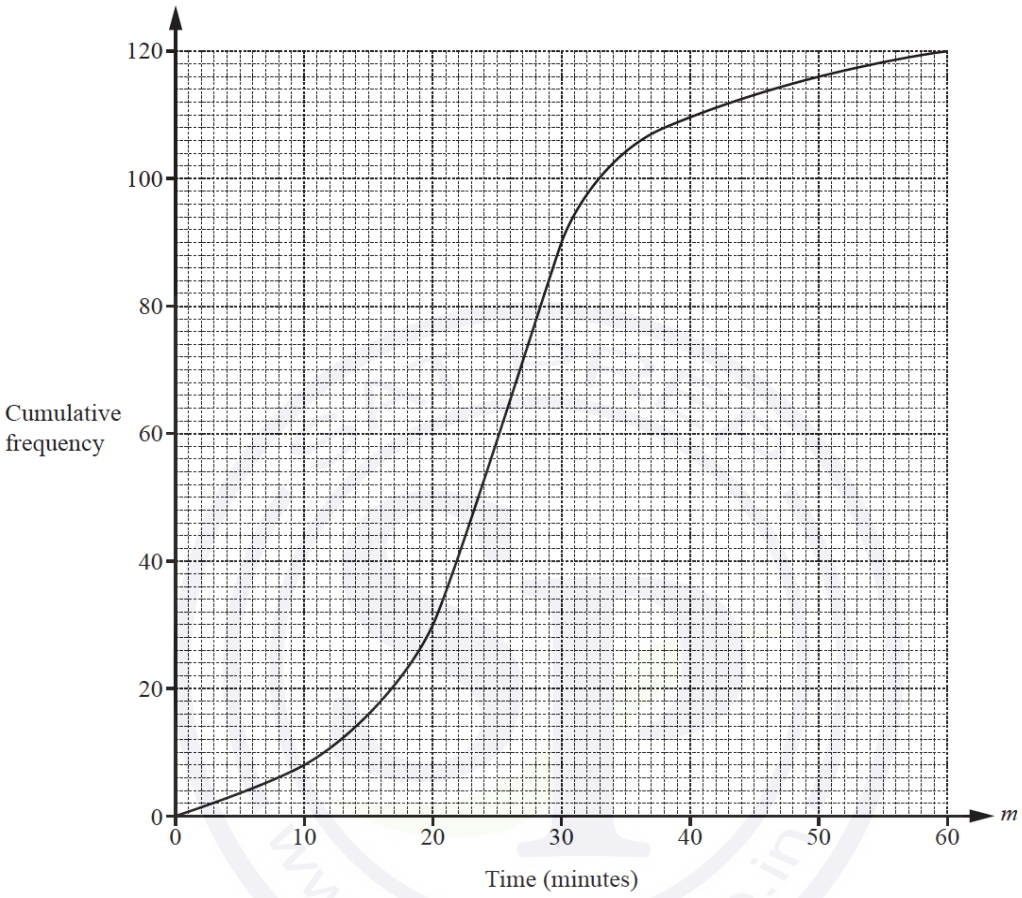
(b) Omar wants to show the information from the table in a pie chart.

Calculate the sector angle for the people who visited the cinema 5 times.

..... [2]

Question 28

The cumulative frequency diagram shows information about the time, m minutes, taken by 120 students to complete some homework.



Use the cumulative frequency diagram to find an estimate of

(a) the interquartile range,

.....min [2]

(b) the number of students who took more than 50 minutes to complete the homework.

..... [2]

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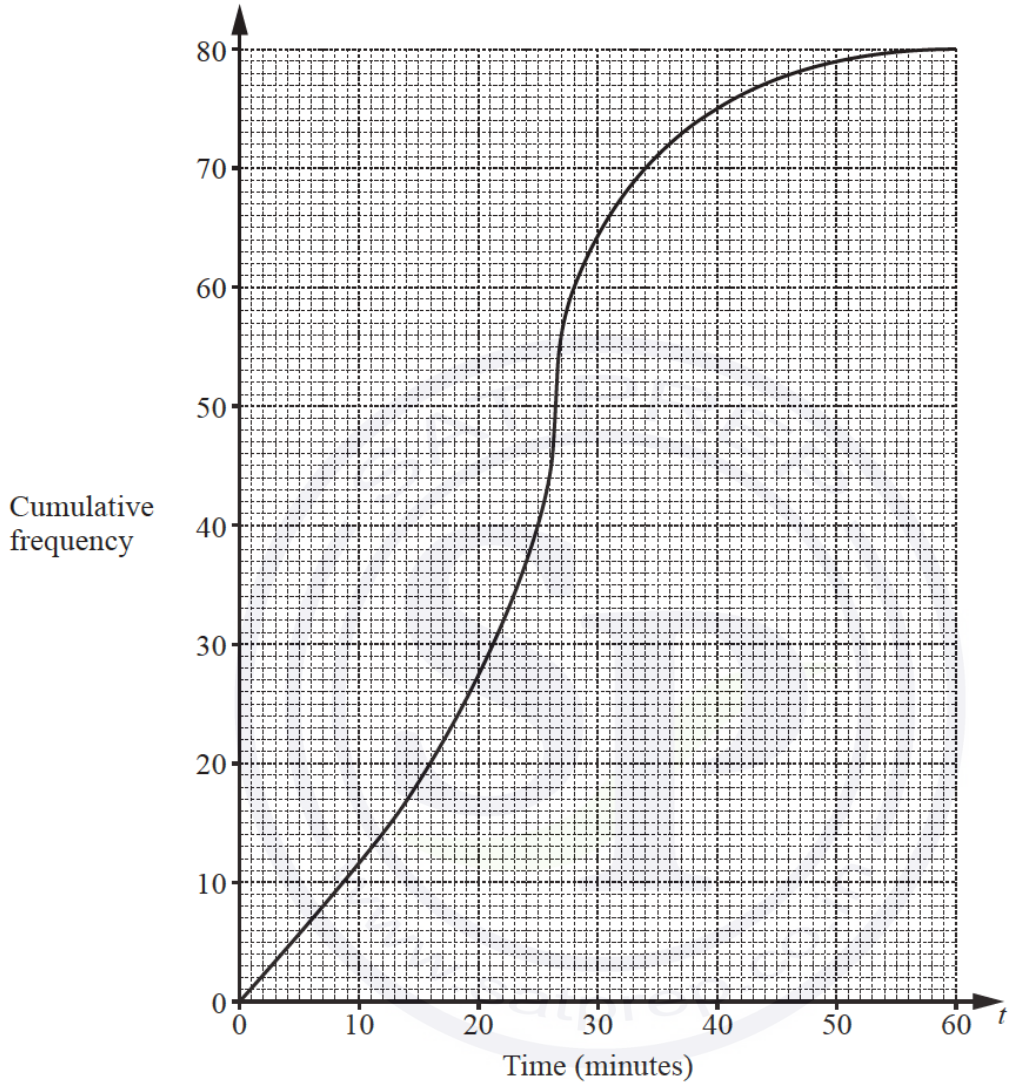
Question 29

The time, t minutes, 80 students each spend completing their homework is recorded.
The cumulative frequency diagram shows the results.



Use the cumulative frequency diagram to find an estimate of

(a) the median,

..... min [1]

(b) the interquartile range,

..... min [2]

(c) the number of students who spend more than 40 minutes completing their homework.

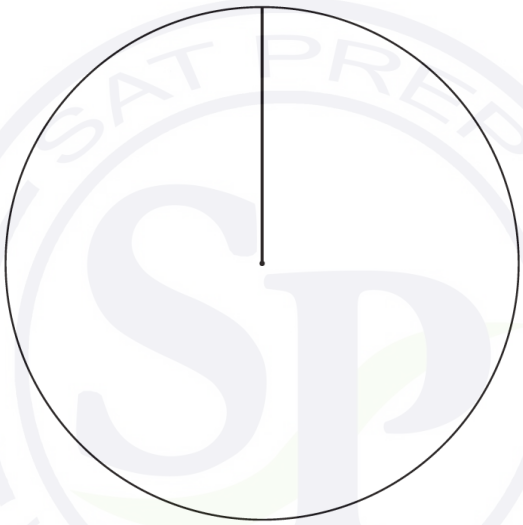
..... [2]

Question 30

120 students choose what they want to do when they leave school.
Their choices are shown in the table.

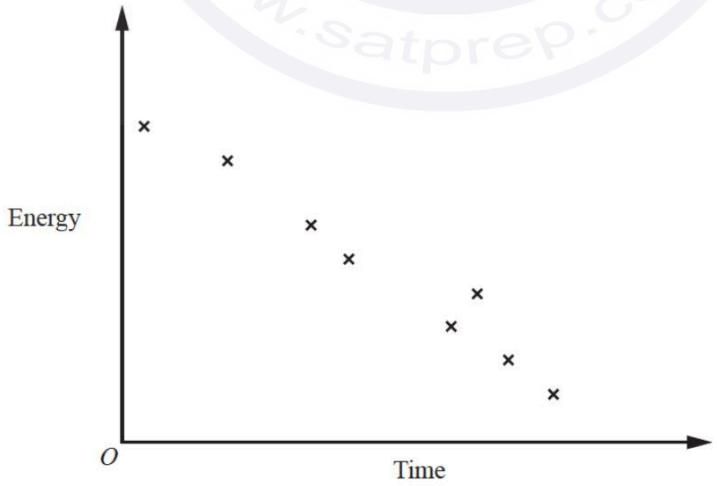
Choice	Number of students
University	57
Training	45
Work	18

Complete the pie chart to show this information.
Label each sector clearly.



[4]

Question 31

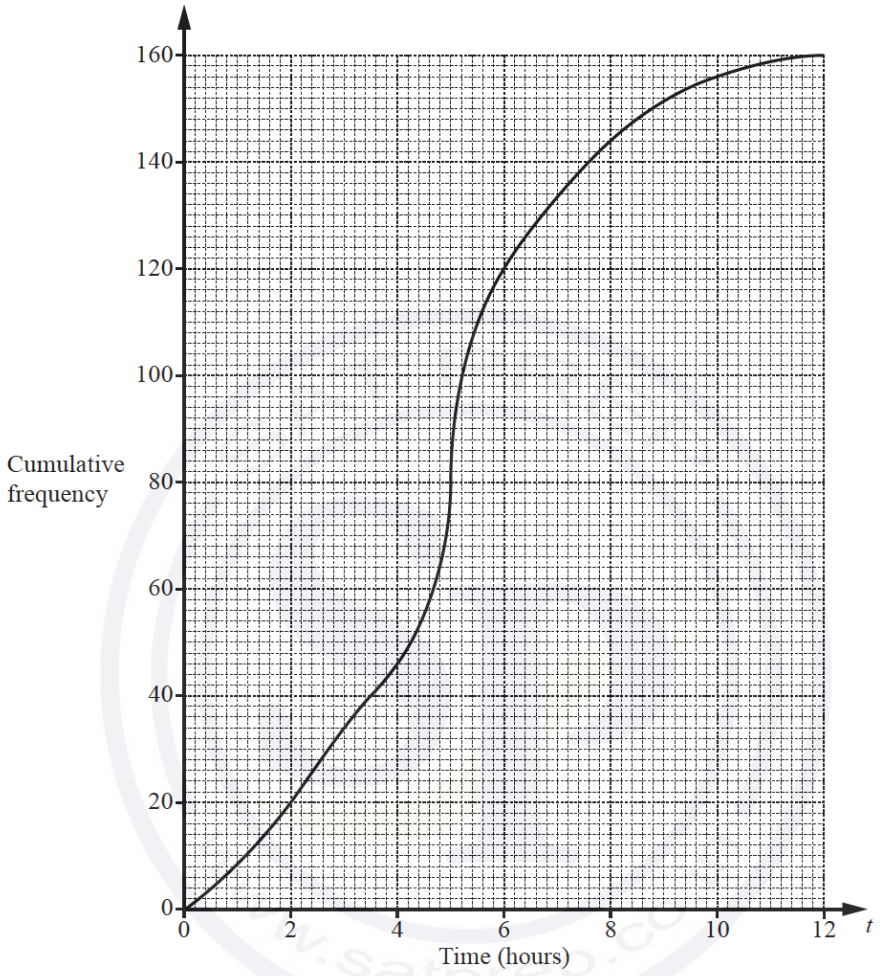


What type of correlation does the scatter diagram show?

.....[1]

Question 32

160 students record the amount of time, t hours, they each spend playing computer games in a week. This information is shown in the cumulative frequency diagram.



(a) Use the diagram to find an estimate of

(i) the median,

..... hours [1]

(ii) the interquartile range.

..... hours [2]

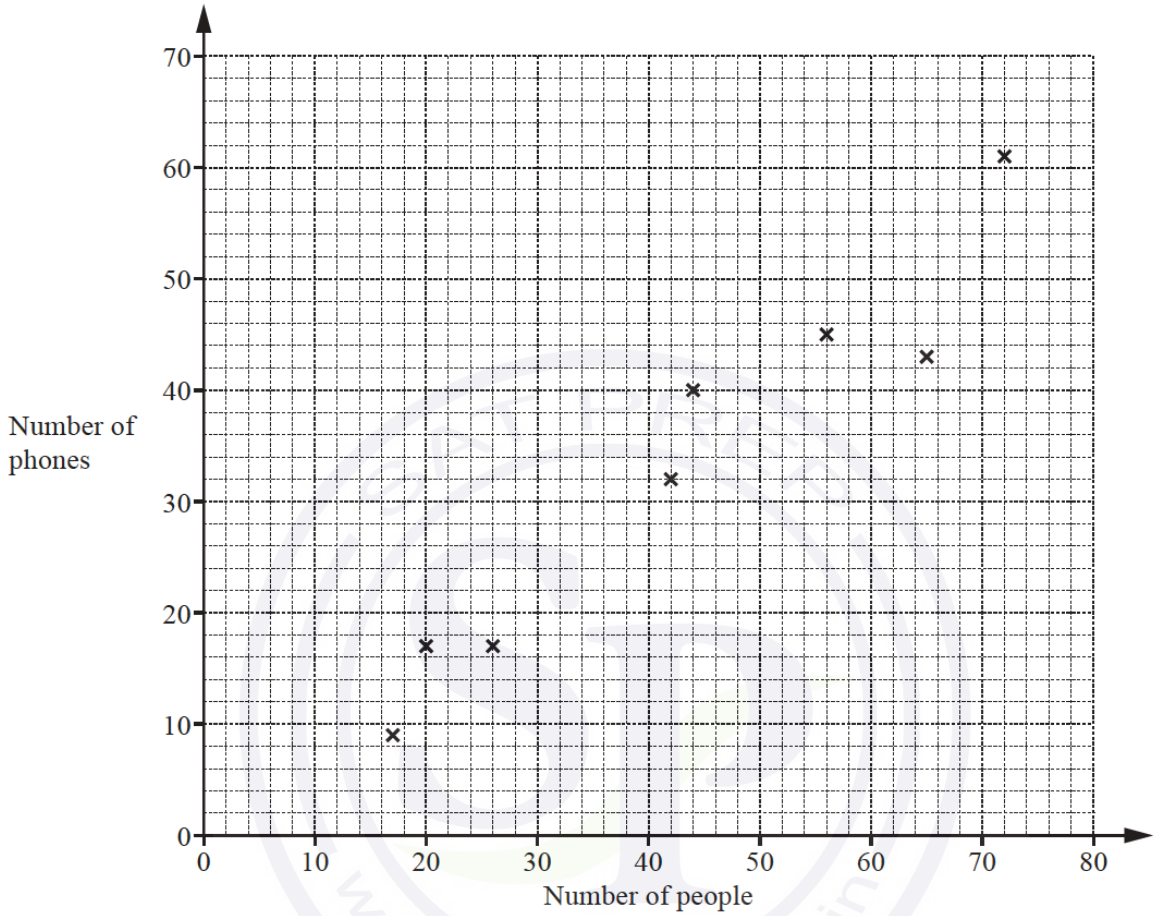
(b) Use the diagram to complete this frequency table.

Time (t hours)	$0 < t \leqslant 2$	$2 < t \leqslant 4$	$4 < t \leqslant 6$	$6 < t \leqslant 8$	$8 < t \leqslant 10$	$10 < t \leqslant 12$
Frequency	20			24	12	4

[2]

Question 33

The scatter diagram shows the number of people and the number of phones in each of 8 buildings.



(a) One of the buildings contains 42 people.

Write down the number of phones in this building.

..... [1]

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

..... [1]

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Question 34

The table shows the different methods of travel for 20 people going to work.

Method of travel	Frequency
Car	10
Walk	5
Bike	3
Bus	2

Which type of average, mean, median or mode, can be used for this information?

..... [1]

Question 35

The table shows the number of people in different age groups at a cinema.

Age (y years)	$15 < y \leqslant 25$	$25 < y \leqslant 30$	$30 < y \leqslant 50$	$50 < y \leqslant 80$
Number of people	35	32	44	12

Dexter draws a histogram to show this information.
The height of the bar he draws for the group $15 < y \leqslant 25$ is 7 cm.

Calculate the height of each of the remaining bars.

$25 < y \leqslant 30$ ..... cm

$30 < y \leqslant 50$ ..... cm

$50 < y \leqslant 80$ ..... cm [3]

Question 36

The time, t minutes, it takes each of 50 students to travel to school is recorded.
The table shows the results.

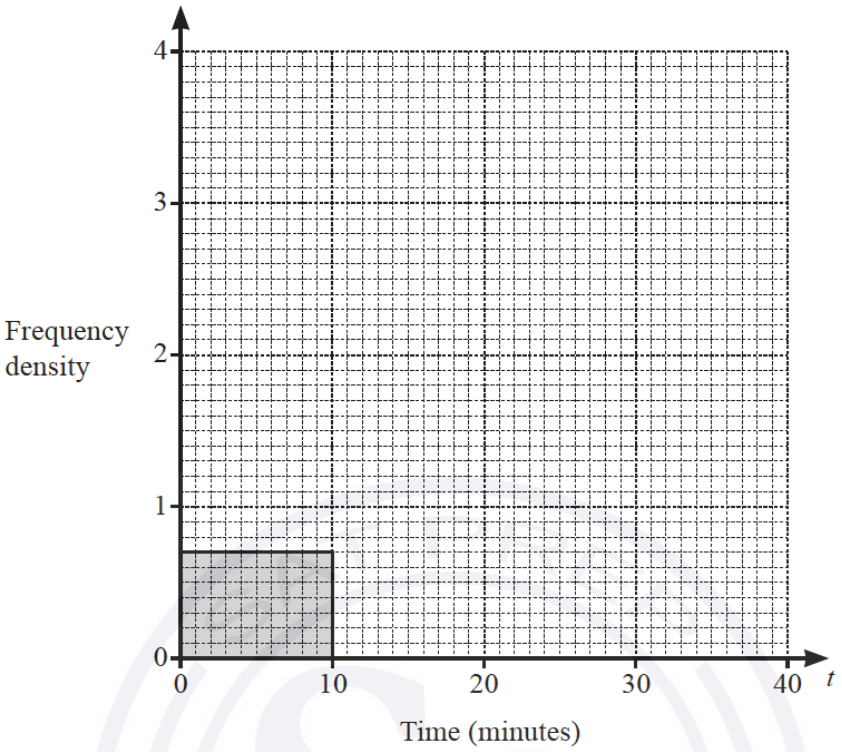
Time (t minutes)	$0 < t \leqslant 10$	$10 < t \leqslant 15$	$15 < t \leqslant 20$	$20 < t \leqslant 40$
Frequency	7	19	16	8

(a) Write down the modal class.

..... $< t \leqslant$ ..... min [1]

(b) On the grid, complete the histogram to show the information in the table.

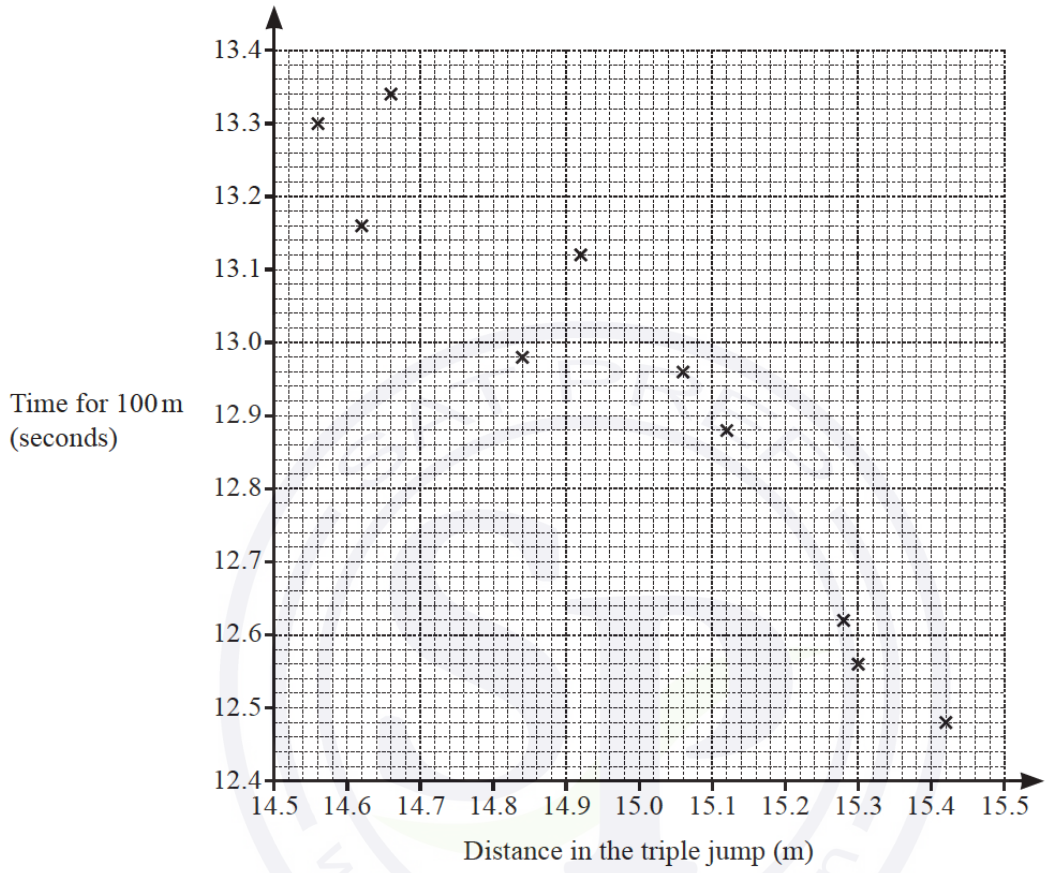
Continue on the next page…



[3]

Question 37

Ten athletes compete in both the 100 metre race and the triple jump.
Their results are shown in the scatter diagram.



(a) One of these athletes jumps 15.12 m in the triple jump.

Write down his time for the 100 metre race.

..... s [1]

(b) The values for two other athletes are shown in the table.

Distance in the triple jump (m)	14.74	15.2
Time for 100 m (seconds)	13.2	12.76

On the scatter diagram, plot these points. [1]

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

..... [1]

Question 38

The table shows how children in Ivan's class travel to school.

Travel to school	Number of children
Walk	12
Car	7
Bicycle	9
Bus	4

Ivan wants to draw a pie chart to show this information.

Find the sector angle for children who walk to school.

..... [2]

Question 39

The mass, correct to the nearest kilogram, of each of 11 parcels is shown below.

24 23 23 26 25 27 18 96 16 17 32

(a) Find the mode.

..... kg [1]

(b) Give a reason why the mean would be an unsuitable average to use.

..... [1]

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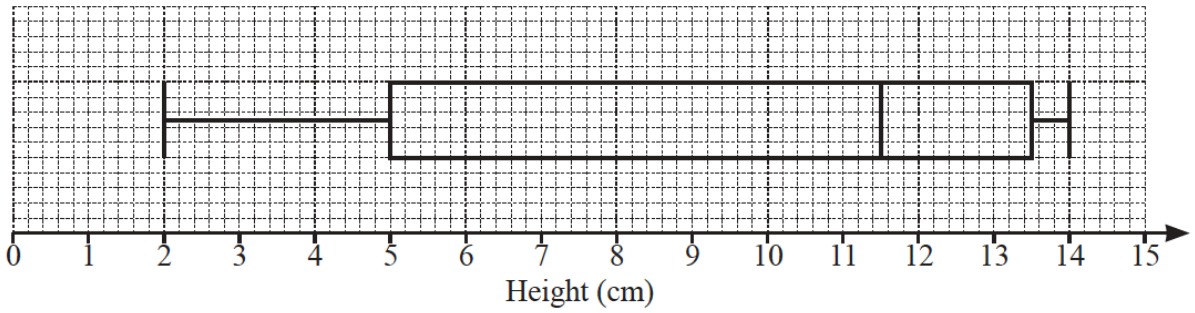
Question 40

The box-and-whisker plot gives information about the heights, in centimetres, of some plants.



(a) Write down the median.

..... cm [1]

(b) Find

(i) the range,

..... cm [1]

(ii) the interquartile range.

..... cm [1]

Question 41

The table shows the marks scored by 40 students in a test.

Mark	5	6	7	8	9	10
Frequency	8	5	11	7	5	4

Calculate the mean mark.

.....[3]

Question 42

The number of people swimming in a pool is recorded each day for 12 days.

24	28	13	38	15	26
45	21	48	36	18	38

(a) Complete the stem-and-leaf diagram.

1	
2	
3	
4	

Key: 1|3 represents 13 swimmers

[2]

(b) Find the median number of swimmers.

..... [1]

Question 43

The table shows the amount of money, $\$x$, given to a charity by each of 60 people.

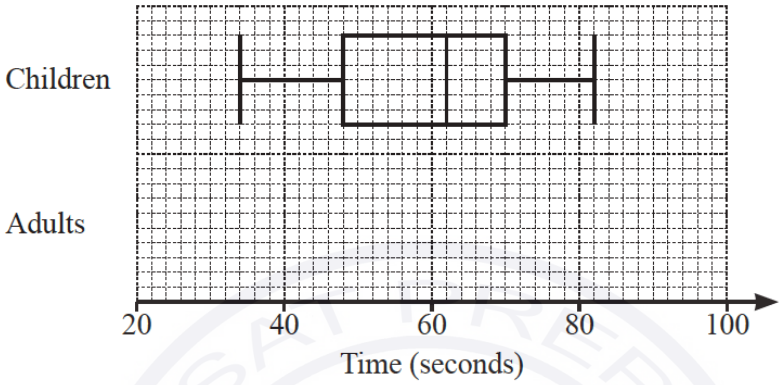
Amount ($\$x$)	$0 < x \leqslant 20$	$20 < x \leqslant 25$	$25 < x \leqslant 35$	$35 < x \leqslant 50$	$50 < x \leqslant 100$
Frequency	21	16	6	10	7

Calculate an estimate of the mean.

$ ..... [4]

Question 44

Gemma records the times, in seconds, taken for a group of children and a group of adults to complete a puzzle.
The box-and-whisker plot shows information about the times taken for the children to complete the puzzle.



(a) Find the interquartile range of the times taken for the children to complete the puzzle.

..... seconds [2]

(b) The table shows some information about the times, in seconds, taken for the adults to complete the puzzle.

Minimum	Lower quartile	Median	Upper quartile	Maximum
28	42	58	70	75

On the grid above, draw the box-and-whisker plot for the adults. [2]

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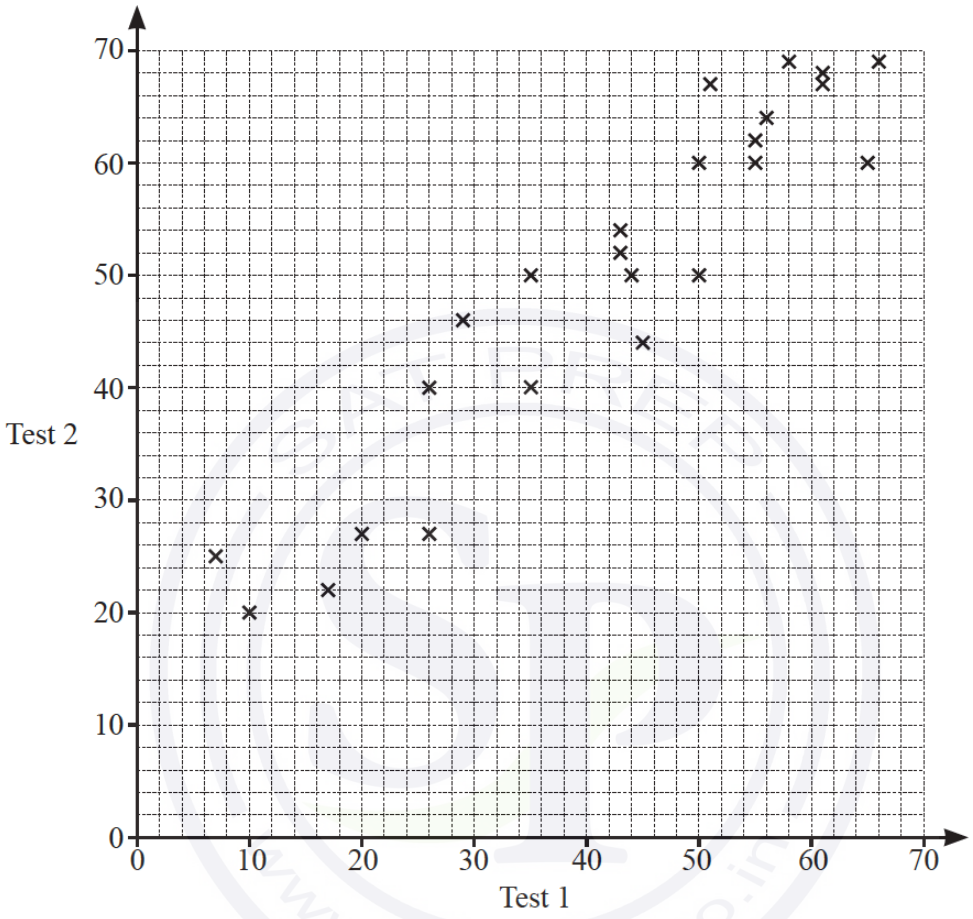
Question 45

Mrs Salaman gives her class two mathematics tests.
The scatter diagram shows information about the marks each student scored.



(a) Write down the highest mark scored on test 1.

..... [1]

(b) Write down the type of correlation shown in the scatter diagram.

..... [1]

(c) Draw a line of best fit on the scatter diagram. [1]

(d) Hamish scored a mark of 40 on test 1.
He was absent for test 2.

Use your line of best fit to find an estimate for his mark on test 2.

.....[1]

Question 46

The table shows information about the times, t seconds, taken by each of 100 students to solve a puzzle.

Time (t seconds)	$0 < t \leqslant 10$	$10 < t \leqslant 15$	$15 < t \leqslant 20$	$20 < t \leqslant 40$	$40 < t \leqslant 75$
Frequency	9	18	22	30	21

(a) Calculate an estimate of the mean time.

..... s [4]

(b) Emmanuel draws a histogram to show this information.
The table shows the heights, in cm, of some of the bars for this histogram.

Complete the table.

Time (t seconds)	$0 < t \leqslant 10$	$10 < t \leqslant 15$	$15 < t \leqslant 20$	$20 < t \leqslant 40$	$40 < t \leqslant 75$
Height of bar (cm)	3.6	14.4	17.6		

[3]

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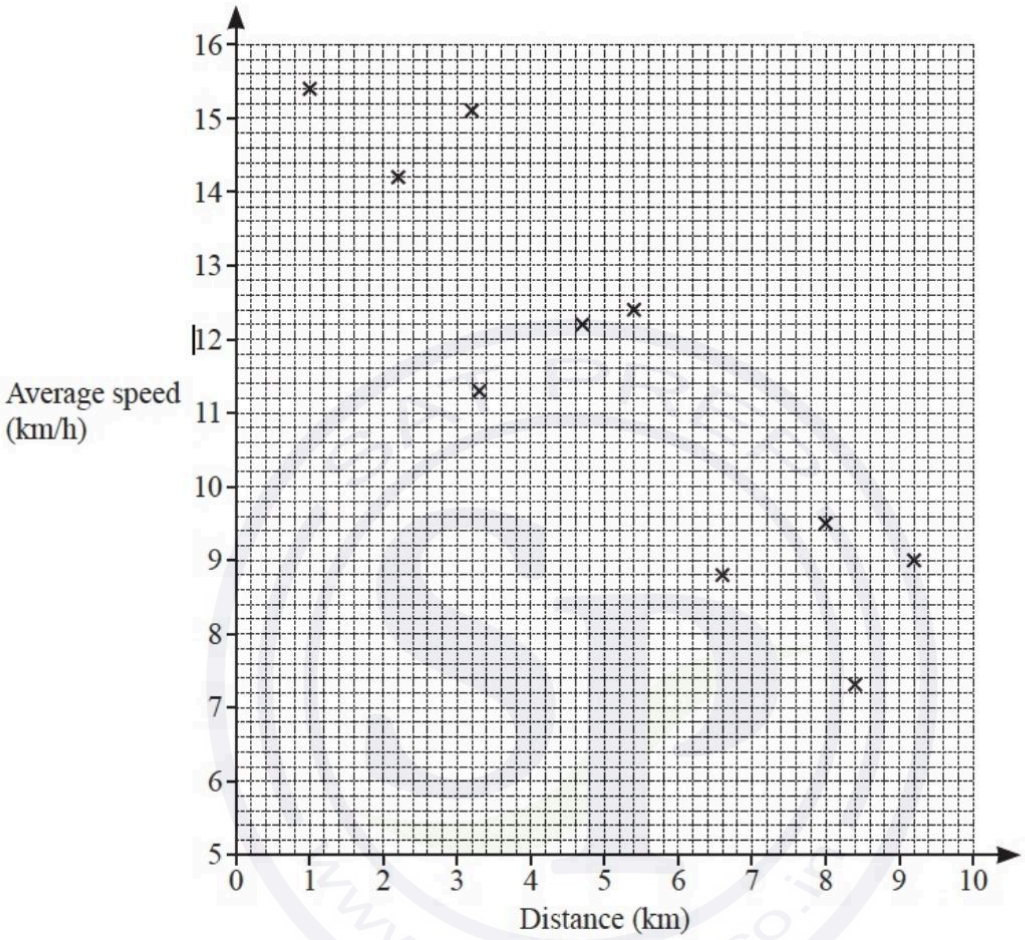
Question 47

Aisha records the distance she runs and her average speed.
The results are shown in the scatter diagram.



(a) The table shows the results of four more runs.

Distance (km)	4.2	5.7	7.1	8.8
Average speed (km/h)	13.4	11.8	9.8	8.3

On the scatter diagram, plot these points. [2]

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

..... [1]

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

(d) Use your line of best fit to estimate her average speed when she runs a distance of 6 km.

..... km/h [1]

Question 48

Some students were asked how many books they each had in their school bags.
The table shows some of this information.

Number of books	5	6	7	8	9	10
Frequency	4	5	x	11	7	5

The mean number of books is 7.6 .

Calculate the value of x.

$x =$ ..... [3]

Question 49

The number of bowls of hot soup sold decreases when the temperature rises.

What type of correlation does this statement describe?

..... [1]

Question 50

The number of passengers on a bus is recorded each day for 14 days.

15	18	22	17	35	38	24
19	19	24	25	31	36	29

(a) Complete the stem-and-leaf diagram.

1	
2	
3	

Key: 1| 5 represents 15 passengers

[2]

(b) Find the median.

..... [1]

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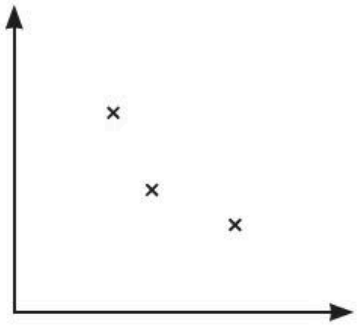
Question 51

(a) Henrik draws this scatter diagram.



Put a ring around the **one** correct statement about this scatter diagram.

It shows no correlation.	It is not possible to tell if there is correlation as there are not enough points.	It shows negative correlation.	It shows positive correlation.

[1]

(b) Each of the four scatter diagrams shows the same set of data.
A line has been drawn on each diagram.

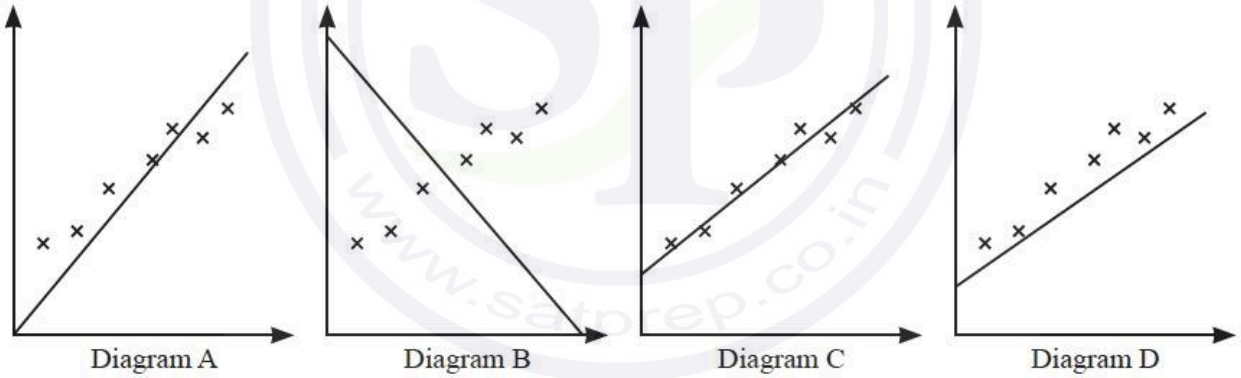


Diagram A Diagram B Diagram C Diagram D

Complete the statement.

The line in Diagram ..... is the most appropriate line of best fit. [1]

Question 52

Emma has 15 mathematics questions to complete.
The stem-and-leaf diagram shows the time, in minutes, it takes her to complete each question.

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

Key: 2 | 0 = 20 minutes

Complete the table.

Mode	..... min
Median	..... min
Range	..... min

[3]

Question 53

The stem-and-leaf diagram shows the number of hours that each of 16 students studied last week.

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

Key: 1 | 2 represents 12 hours

Find

(a) the median,

..... h [1]

(b) the mode,

..... h [1]

(c) the range.

..... h [1]

Question 54

The stem-and-leaf diagram shows the age, in years, of each of 15 women.

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

Key: 3 | 1 represents 31 years

Complete these statements.

The modal age is .....

The median age is .....

The percentage of women that are older than 51 years is ..... %. [3]

Question 55

The table shows the relative frequency of the games won by a football team.

Result of game	won	lost	drawn
Relative frequency	0.1		

The number of games lost is twice the number of games drawn.

Complete the table.

[3]

Question 56

The number of items that each of 22 people buy in a supermarket is shown in the stem-and-leaf diagram.

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

Key: 1 | 1 represents 11 items

Continue on the next page..

(a) Find the mode.

..... [1]

(b) Find the median.

..... [1]

Question 57

As the temperature increases, people eat more ice cream.

What type of correlation does this statement describe?

..... [1]

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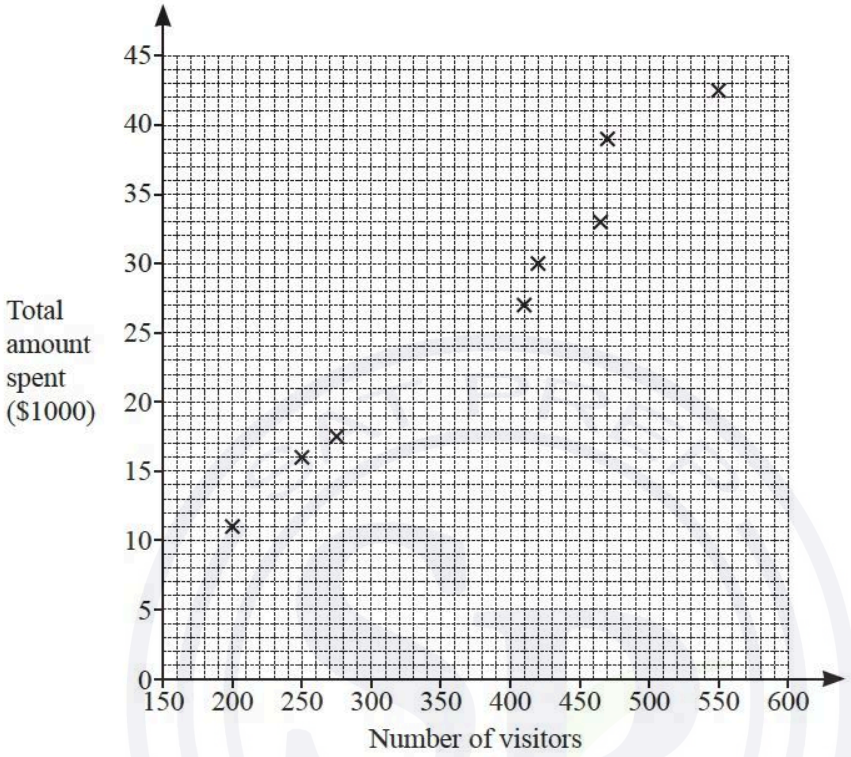
Question 58

The scatter diagram shows the number of visitors and the total amount spent, in thousands of dollars, at a zoo on each of eight days.



(a) On one of the eight days there are 410 visitors.

Find the total amount spent by visitors during this day.

$ ..... [1]

(b) Information for the ninth day is shown in the table.

Number of visitors	175
Total amount spent ($1000)	9

Plot this information on the scatter diagram. [1]

(c) Draw a line of best fit on the scatter diagram. [1]

(d) On the tenth day the total amount spent is $22 000.

Estimate the number of visitors on this day.

..... [1]

Question 59

These are the masses, in kg, of 12 parcels.

0.3 0.4 1.2 0.8 1.1 2.1 1.7 1.8 1.2 2.3 0.7 1.1

(a) Complete the stem-and-leaf diagram for the 12 parcels.

0	3 4
1	
2	

Key: 0 | 3 represents 0.3 kg

[2]

(b) Find the median.

..... kg [1]

Question 60

Thibault records the number of cars of each colour in a car park.

Colour	Black	White	Silver	Red
Number of cars	8	5	4	3

He draws a pie chart to show this information.

Calculate the sector angle for the red cars.

..... [2]

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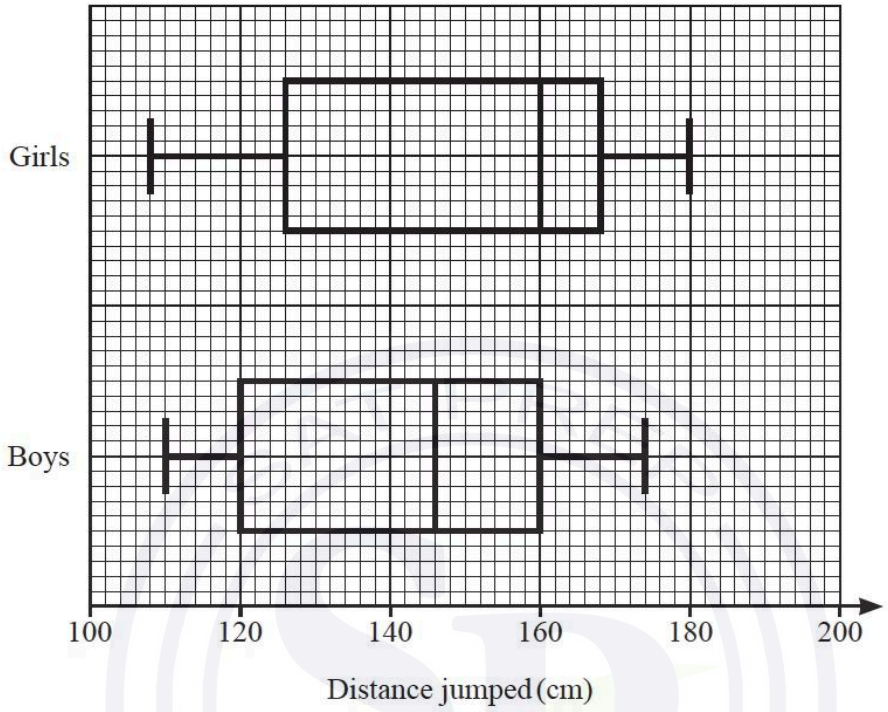
Question 61

136 girls and 144 boys each measure the distance they jump in centimetres.
The box-and-whisker plots show the distributions of these distances.



Each child who jumps a distance greater than 160 cm gets a certificate.

Work out an estimate of the total number of children who get a certificate.

..... [2]

Question 62

Daryl records the number of hours in a week 8 people spend exercising.

5 2 1.5 3 18 4.5 2 4

(a) Find the median.

..... h [2]

(b) Explain why the mean may not be a suitable average to use.

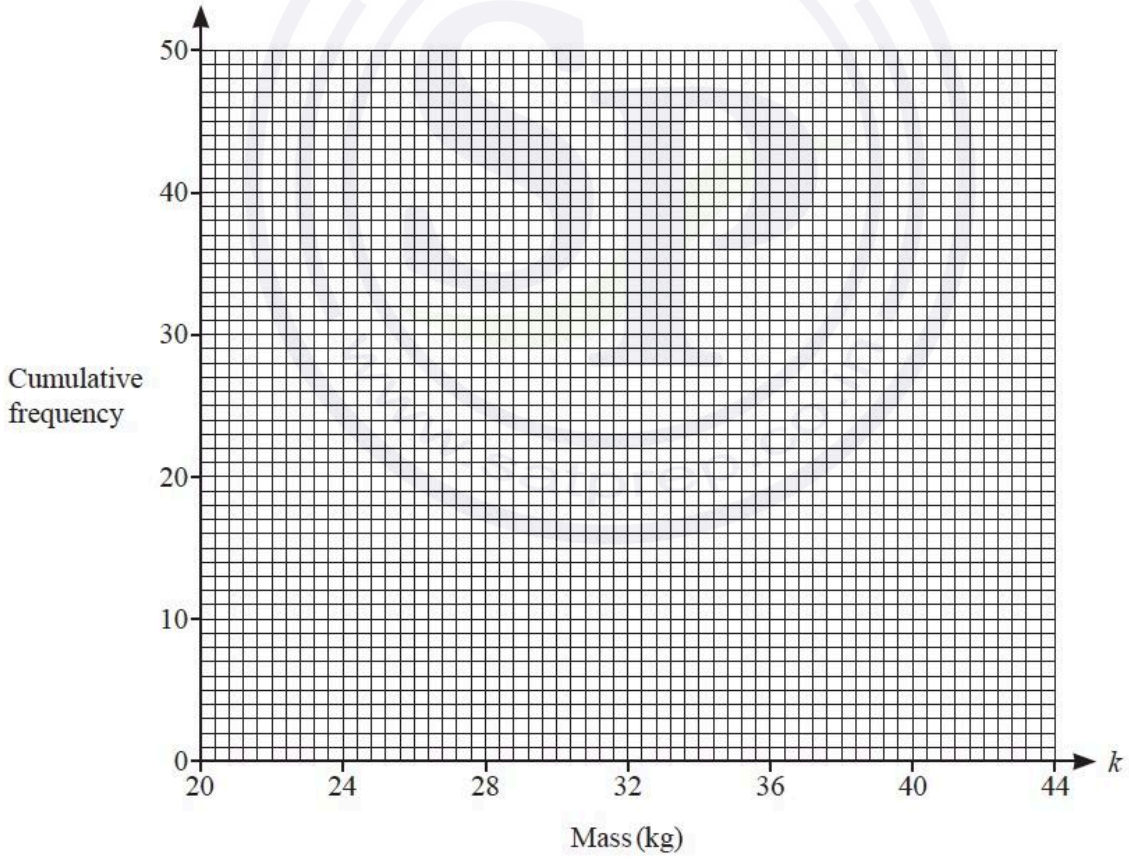
..... [1]

Question 63

The table shows information about the mass of each of 50 children.

Mass (k kg)	Cumulative Frequency
$k \leqslant 20$	0
$k \leqslant 22$	7
$k \leqslant 24$	23
$k \leqslant 28$	35
$k \leqslant 32$	43
$k \leqslant 36$	47
$k \leqslant 42$	50

(a) Draw a cumulative frequency diagram to show this information.



[3]

(b) Use your graph to find an estimate of the 90th percentile.

..... [1]

Question 64

On ten days, Stefan records the number of minutes he has to wait for a train.

1 3 12 5 4 23 5 24 11 8

(a) Complete the stem-and-leaf diagram to show this information.

0	1 3
1	
2	

Key: 0 | 1 represents 1 minute

[2]

(b) Find the median.

..... min [1]

Question 65

The stem-and-leaf diagram shows the heights, in centimetres, of some plants.

10	4 8
11	1 3 4 6
12	2 3 6 9
13	2 6 9

Key: 10 | 4 represents 10.4 cm

(a) Find the median height.

..... cm [1]

(b) Work out the mean height.

..... cm [2]

Question 66

Some students record their reaction times.
The table shows the results.

Reaction time (t seconds)	$0 < t \leqslant 6$	$6 < t \leqslant 10$
Frequency	18	16

On a histogram, the height of the block for the $0 < t \leqslant 6$ interval is 7.5 cm.

Calculate the height of the block for the $6 < t \leqslant 10$ interval.

..... cm [2]

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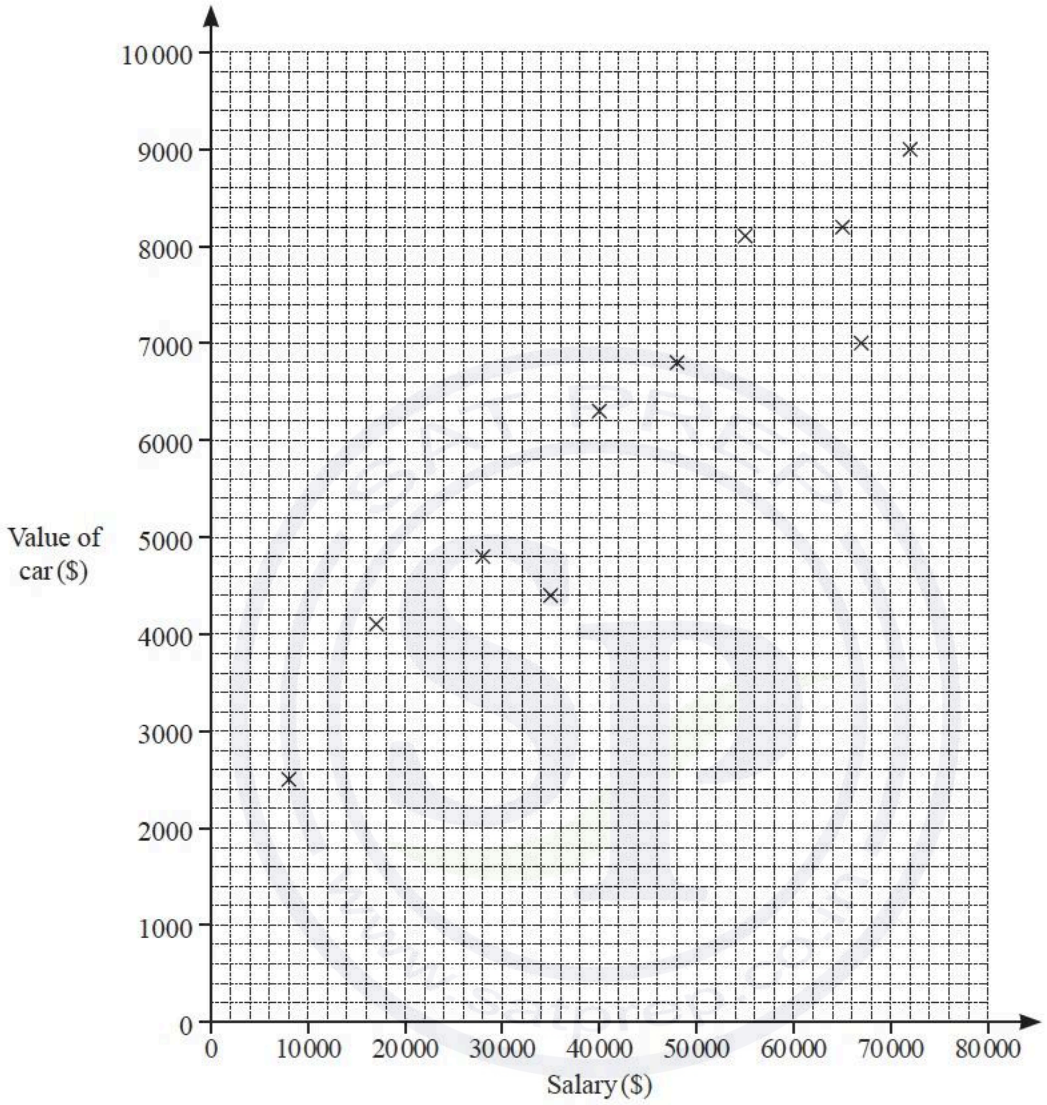
Question 67

For each of 10 people working in an office, the scatter diagram shows their salary and the value of their car.



(a) One of these people has a salary of $28 000.

Find the value of their car.

$ ..... [1]

(b) Another person starts to work in the office.
Their salary is $54 000 and the value of their car is $6100.

Plot this information on the scatter diagram. [1]

(c) What type of correlation is shown in the scatter diagram?

..... [1]

Question 68

The stem-and-leaf diagram shows the time, in minutes, it takes each of 15 people to complete a race.

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

Key: 1|6 represents 16 minutes

Find

(a) the mode

..... min [1]

(b) the range

..... min [1]

(c) the median.

..... min [1]

Question 69

The height of each of 200 people is measured.
The table shows the results.

Height (h cm)	$100 < h \leqslant 120$	$120 < h \leqslant 130$	$130 < h \leqslant 150$	$150 < h \leqslant 190$
Frequency	32	55	64	49

Calculate an estimate of the mean height.

..... cm [4]

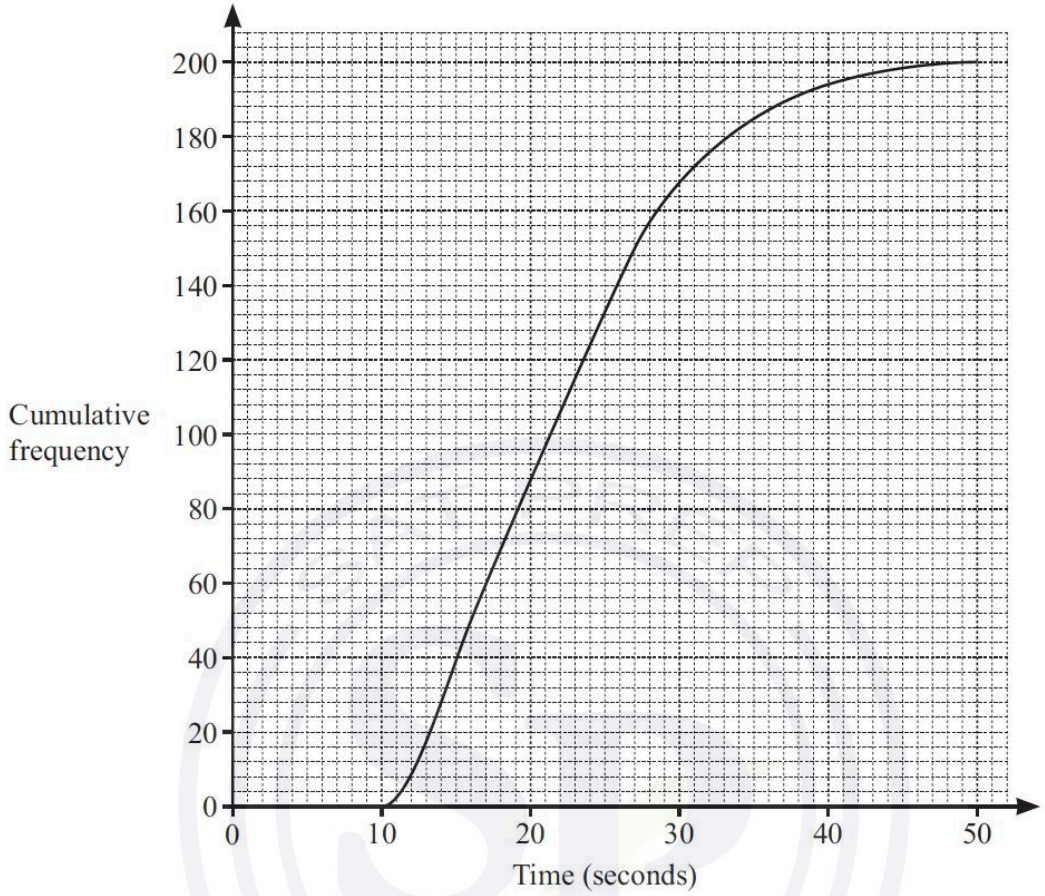
Question 70

As the temperature increases, the number of people who go swimming increases.

Write down the type of correlation that this statement describes.

..... [1]

Question 71



The time taken for each of 200 students to complete a calculation is measured.
The cumulative frequency diagram shows the results.

Use the diagram to find an estimate for

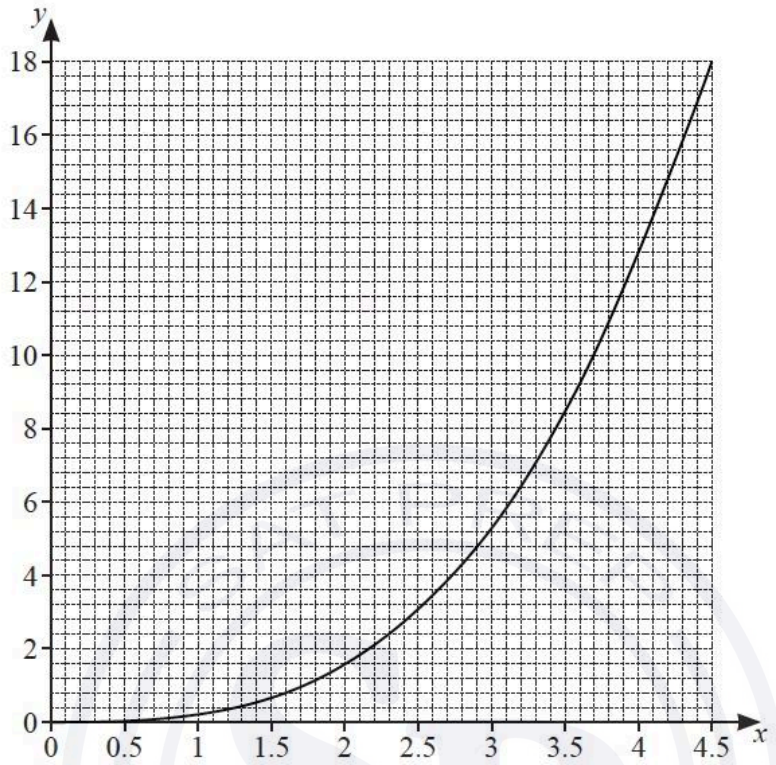
(a) the interquartile range

..... s [2]

(b) the number of students taking more than 40 seconds to complete the calculation.

..... [2]

Question 72



The graph of $y = f(x)$ is drawn on the grid.

(a) Draw the tangent to the graph at the point $x = 3$. [1]

(b) Use your tangent to find an estimate for the gradient of the curve at the point $x = 3$.

..... [2]

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Question 73

A delivery driver records the number of pizzas she delivers each month for one year.

48	44	39	28	57	22
36	41	54	57	49	52

(a) Complete the stem-and-leaf diagram.

2	
3	
4	
5	

Key: 4 | 8 represents 48 pizzas

[2]

(b) Find the median.

..... [1]

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