FREQUENCY POLYGONS

Pearson Edexcel - Tuesday 11 June 2019 - Paper 3 (Calculator) Higher Tier
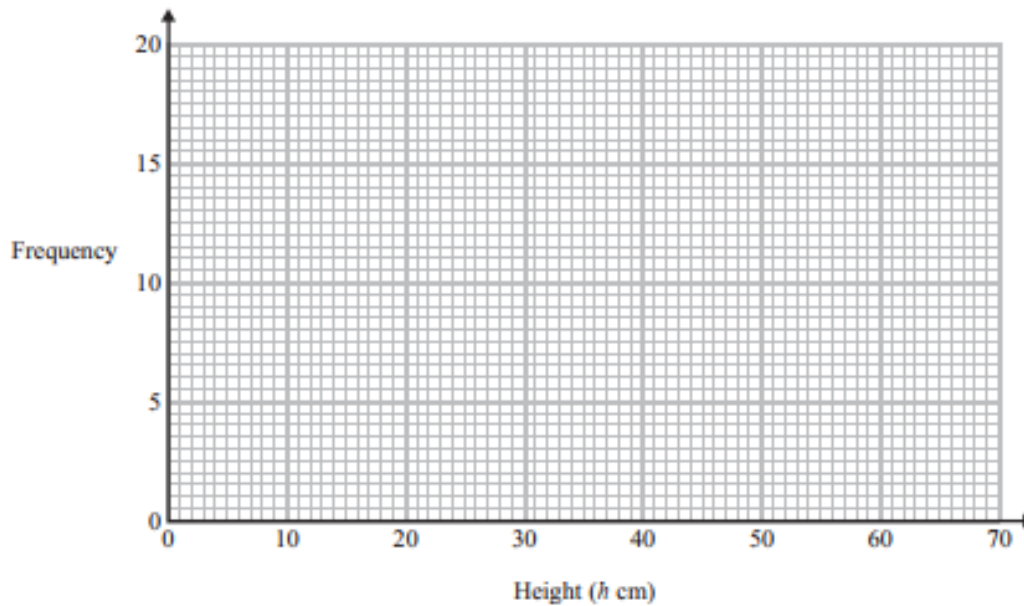
1.

3   The table shows information about the heights of 80 plants.

Height (h cm)	Frequency
$10 < h \leqslant 20$	7
$20 < h \leqslant 30$	13
$30 < h \leqslant 40$	14
$40 < h \leqslant 50$	12
$50 < h \leqslant 60$	16
$60 < h \leqslant 70$	18

(a) Find the class interval that contains the median.

....

(1)

(b) On the grid, draw a frequency polygon for the information in the table.

Height (h cm)

(2)

(Total for Question 3 is 3 marks)

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Higher Tier

2.

7   The table gives information about the speeds of 70 cars.

Speed (s mph)	Frequency
$0 < s \leqslant 10$	14
$10 < s \leqslant 20$	18
$20 < s \leqslant 30$	26
$30 < s \leqslant 40$	12

Draw a frequency polygon for this information.
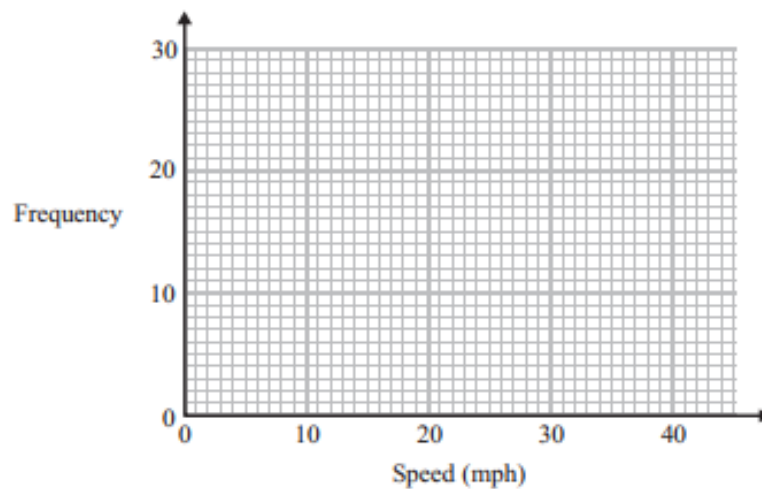
(Total for Question 7 is 2 marks)

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Higher Tier

3.

1 The table shows information about the heights of 80 children.

Height (h cm)	Frequency
$130 < h \leqslant 140$	4
$140 < h \leqslant 150$	11
$150 < h \leqslant 160$	24
$160 < h \leqslant 170$	22
$170 < h \leqslant 180$	19

(a) Find the class interval that contains the median.

....
(1)

(b) Draw a frequency polygon for the information in the table.

(2)
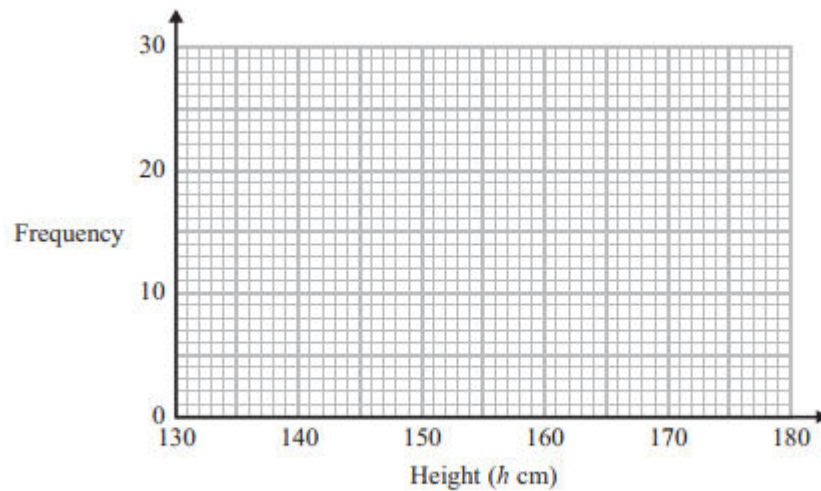
(Total for Question 1 is 3 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 2 (Calculator) Higher Tier

4.

4 The grouped frequency table gives information about the heights of 30 students.

Height (h cm)	Frequency
$130 < h \leqslant 140$	1
$140 < h \leqslant 150$	7
$150 < h \leqslant 160$	8
$160 < h \leqslant 170$	10
$170 < h \leqslant 180$	4

(a) Write down the modal class interval.

....

(1)

This incorrect frequency polygon has been drawn for the information in the table.
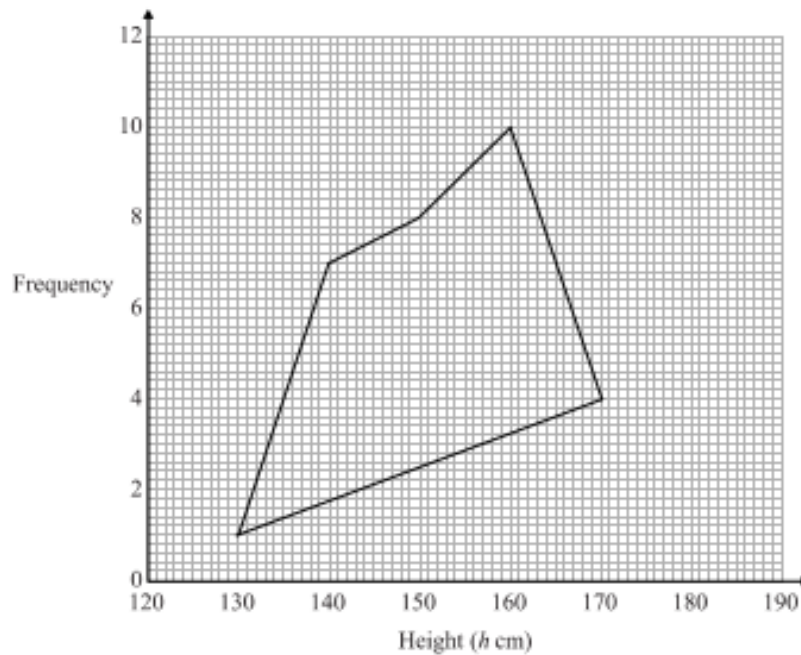
(b) Write down two things wrong with this incorrect frequency polygon.

1 ....

2 ....

(2)

(Total for Question 4 is 3 marks)

Pearson Edexcel - Monday 8 June 2015 - Paper 2 (Calculator) Higher Tier

5.

9 The frequency table gives information about the numbers of emails sent by 51 teachers on Monday.

Number of emails sent (m)	Frequency
$0 < m \leqslant 10$	5
$10 < m \leqslant 20$	17
$20 < m \leqslant 30$	14
$30 < m \leqslant 40$	9
$40 < m \leqslant 50$	6

(a) On the grid below, draw a frequency polygon for this information.
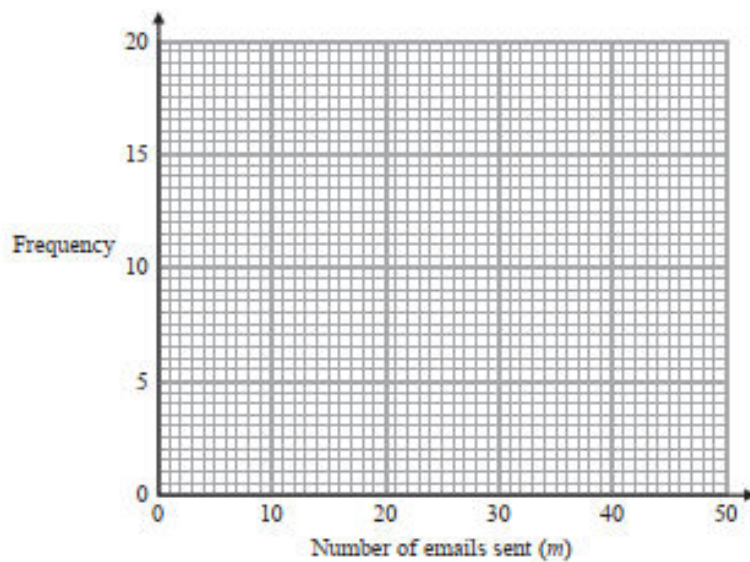
(2)

*(b) Nalini says that at least a quarter of these teachers sent more than 30 emails.
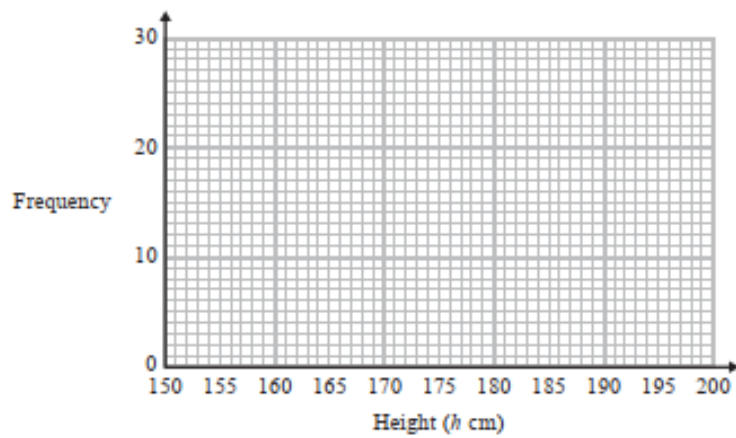
Is Nalini correct?
You must explain your answer.

(2)

(Total for Question 9 is 4 marks)

Pearson Edexcel - Friday 7 November 2014 - Paper 2 (Calculator) Higher Tier

6.

8   The frequency table gives information about the heights of some people.

Height (h cm)	Frequency
$160 < h \leqslant 165$	2
$165 < h \leqslant 170$	5
$170 < h \leqslant 175$	10
$175 < h \leqslant 180$	21
$180 < h \leqslant 185$	16
$185 < h \leqslant 190$	4

Draw a frequency polygon for this information.

(Total for Question 8 is 2 marks)

Pearson Edexcel - Friday 8 November 2013 - Paper 2 (Calculator) Higher Tier

7.

14 The table gives information about the temperature, $T \, °C$, at noon in a town for 50 days.

Temperature ($T \, °C$)	Frequency
$8 < T \leqslant 12$	6
$12 < T \leqslant 16$	8
$16 < T \leqslant 20$	13
$20 < T \leqslant 24$	21
$24 < T \leqslant 28$	2

(a) Write down the modal class interval.

....
(1)

(b) Calculate an estimate for the mean temperature.

.... °C
(4)

(c) Draw a frequency polygon for the information in the table.

(2)
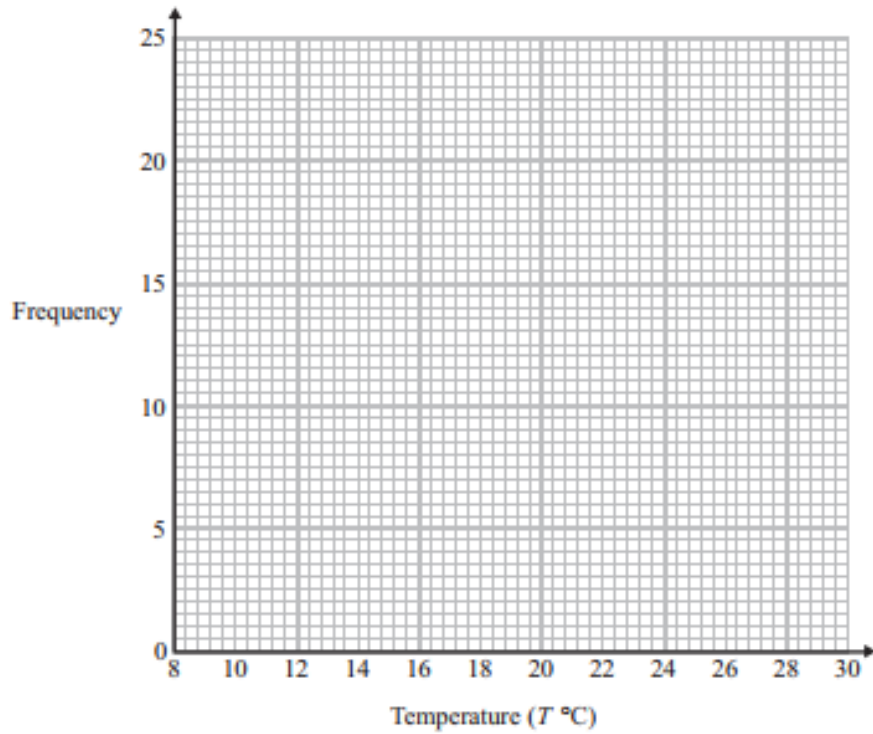
(Total for Question 14 is 7 marks)

Pearson Edexcel - Thursday 8 November 2012 - Paper 2 (Calculator) Higher Tier

8.
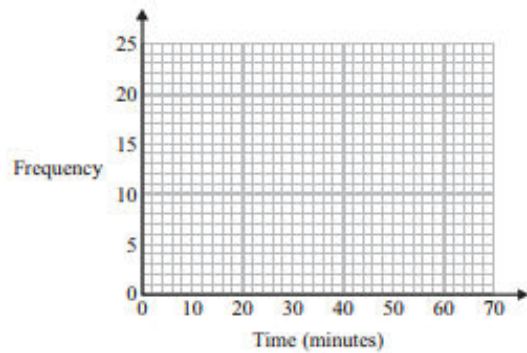
12 The frequency table gives information about the times it took some office workers to get to the office one day.

Time (t minutes)	Frequency
$0 < t \leqslant 10$	4
$10 < t \leqslant 20$	8
$20 < t \leqslant 30$	14
$30 < t \leqslant 40$	16
$40 < t \leqslant 50$	6
$50 < t \leqslant 60$	2

(a) Draw a frequency polygon for this information.

(2)

(b) Write down the modal class interval.

....

(1)

One of the office workers is chosen at random.

(c) Work out the probability that this office worker took more than 40 minutes to get to the office.
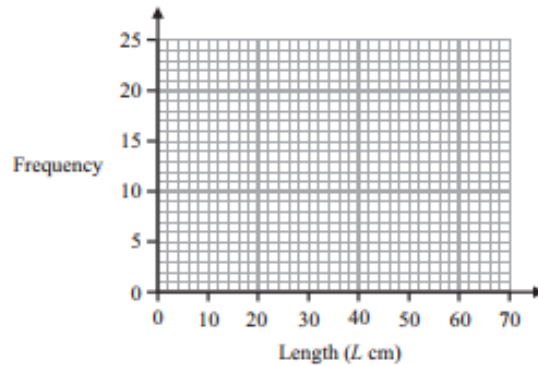
....

(2)

(Total for Question 12 is 5 marks)

Pearson Edexcel - Friday 2 March 2012 - Paper 3 (Non-Calculator) Higher Tier

9.

12. The table gives information about the lengths of the branches on a bush.

Length (L cm)	Frequency
$0 \leqslant L < 10$	20
$10 \leqslant L < 20$	12
$20 \leqslant L < 30$	10
$30 \leqslant L < 40$	8
$40 \leqslant L < 50$	6
$50 \leqslant L < 60$	0

(a) Draw a frequency polygon to show this information.

(2)

(b) Write down the modal class interval.

....

(1)

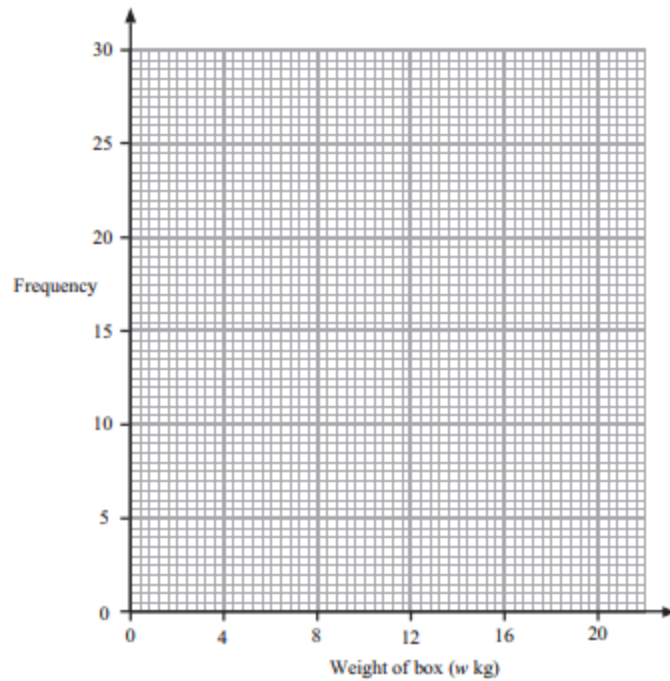(Total 3 marks)

13. The table shows some information about the weights, in kg, of 100 boxes.

Weight of box (w kg)	Frequency
$0 < w \leqslant 4$	10
$4 < w \leqslant 8$	17
$8 < w \leqslant 12$	28
$12 < w \leqslant 16$	25
$16 < w \leqslant 20$	20

Draw a frequency polygon to show this information.

Frequency

Weight of box (w kg)

(Total 2 marks)

8. The table shows some information about the ages, in years, of 60 people.

Age (in years)	Frequency
0 to 9	6
10 to 19	13
20 to 29	12
30 to 39	9
40 to 49	7
50 to 59	3
60 to 69	10

(a) Write down the modal class.

....
(1)

Luke says

'The median lies in the class 30 to 39'

Luke is wrong.

(b) Explain why.

....

....
(1)
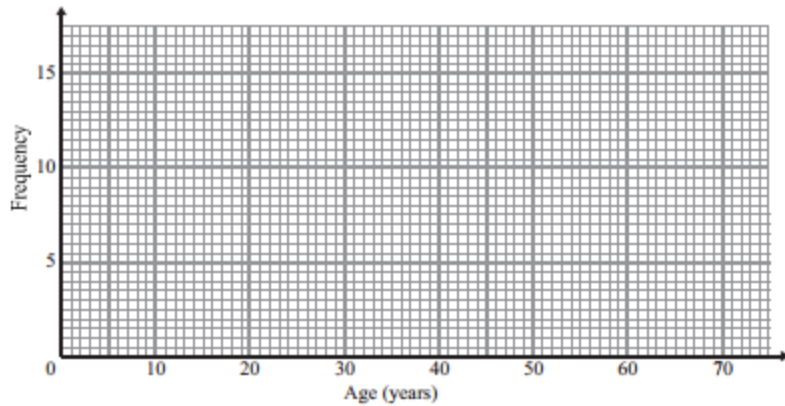
(c) On the grid, draw a frequency polygon for the information in the table.
(2)

(Total 4 marks)

Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier

12.

8. Sasha carried out a survey of 60 students.
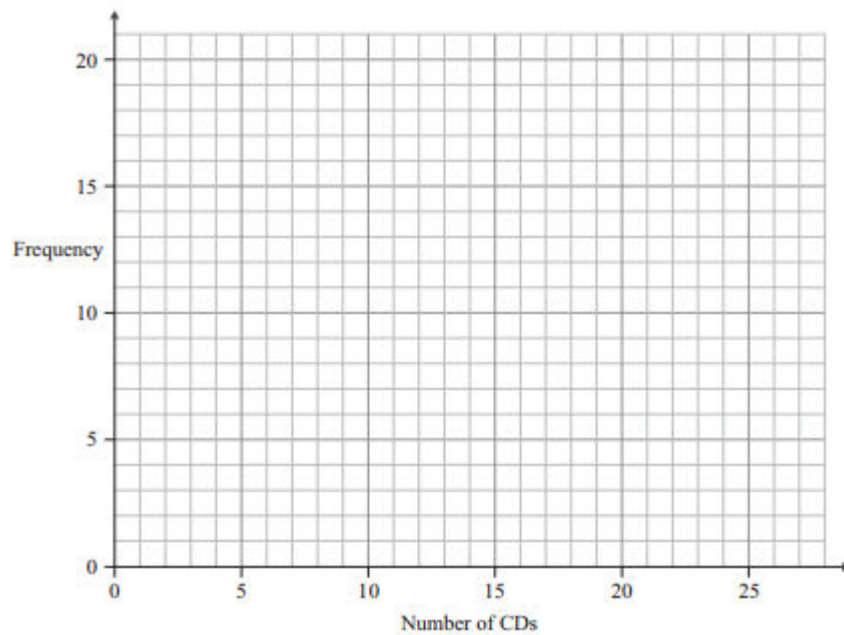   She asked them how many CDs they each have.

   This table shows information about the numbers of CDs these students have.

Number of CDs	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24
Frequency	8	11	9	14	18

   (a) Write down the class interval containing the median.

   ....
   (1)

   (b) On the grid, draw a frequency polygon to show the information given in the table.

   (2)

   (Total 3 marks)

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

13.
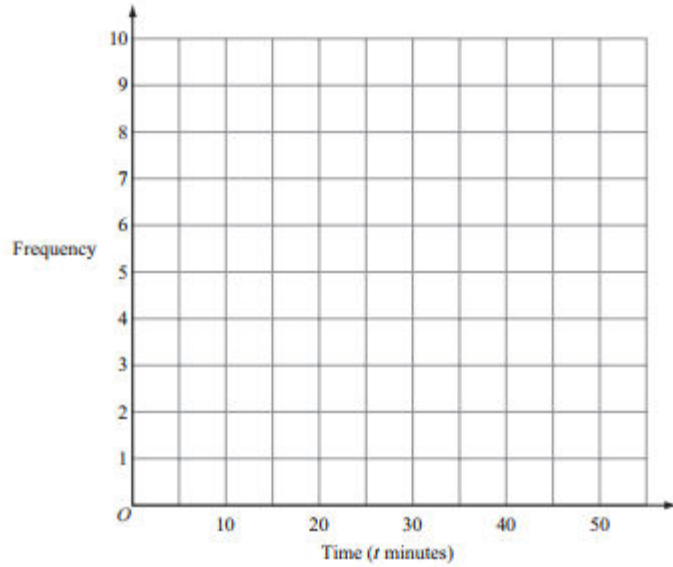
6. 30 students took a test.
The table shows information about how long it took them to complete the test.

Time (*t* minutes)	Frequency
$0 < t \leqslant 10$	5
$10 < t \leqslant 20$	7
$20 < t \leqslant 30$	8
$30 < t \leqslant 40$	6
$40 < t \leqslant 50$	4

(a) On the grid, draw a frequency polygon for this information.

(2)

(b) Write down the modal class interval.

....

(1)

(Total 3 marks)

9 The graph shows the number of umbrellas sold in Ling's shop for each quarter from quarter 1 of 2017 to quarter 3 of 2019.
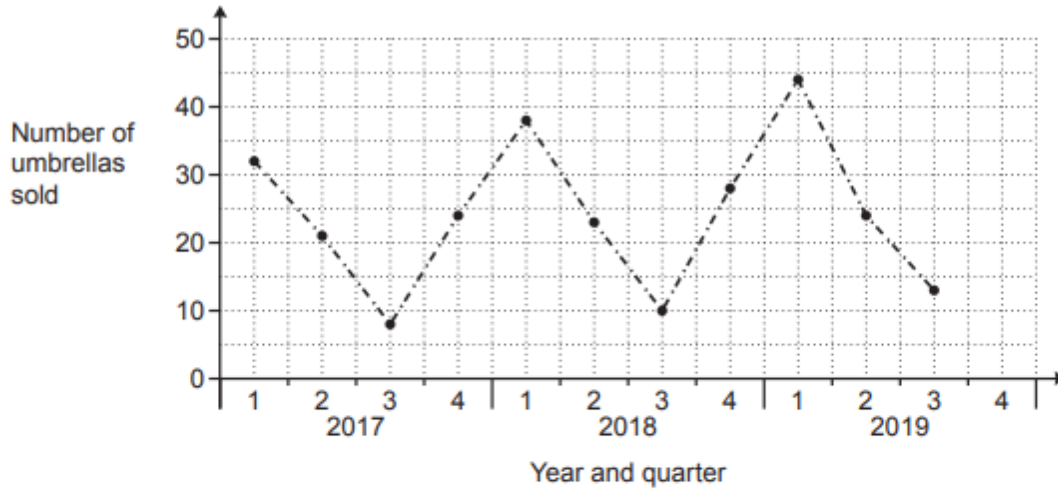
(a) The shop sold 32 umbrellas in quarter 4 of 2019.

Complete the graph. **[1]**

(b) Make one comment about the **seasonal** variation shown in this graph.

....

.... **[1]**

(c) Make one comment about the **annual** variation shown in this graph.

....

.... **[1]**
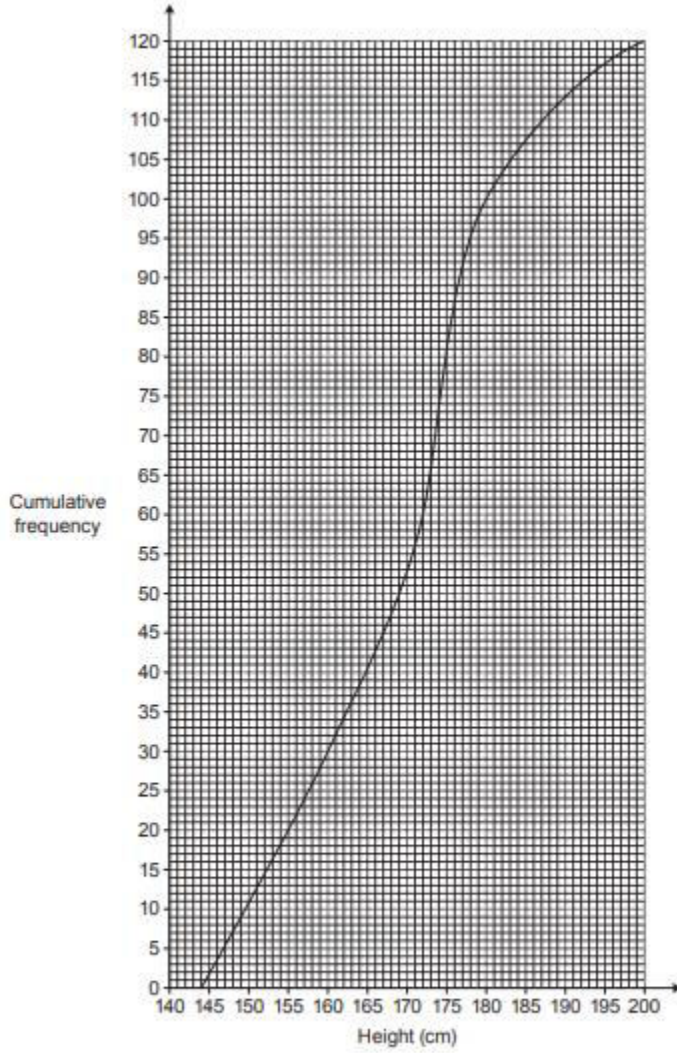
(d) Ling predicts that she will sell 50 umbrellas in quarter 1 of 2020.

What assumption has she made?

....

.... **[1]**

13 (a) The cumulative frequency graph shows the distribution of the heights of members of a rowing club.
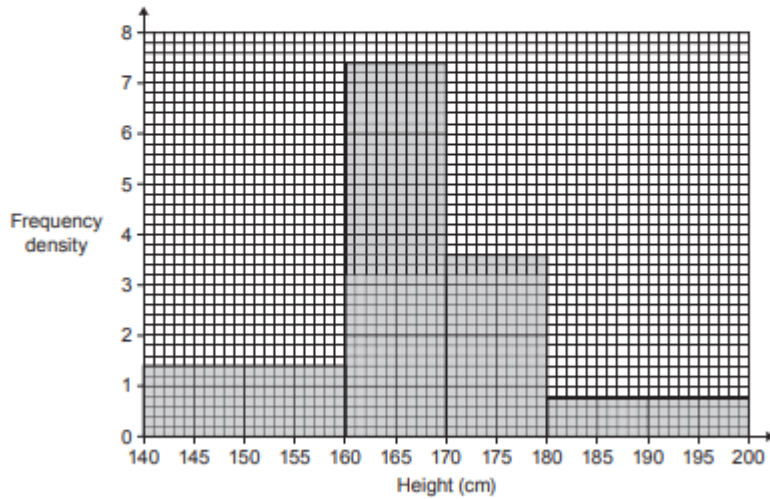

(i) Find the median.

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

(ii) Find the interquartile range.

(ii) .... cm **[2]**

(iii) Calculate the percentage of the members who are at least 180 cm tall.

(iii) .... % **[3]**

**(b)** The histogram summarises the heights of the 153 members of a swimming club.

Which club has the greater median height?
You must show all your working.

8 The table shows the number of computers sold in Tom's shop each quarter from 2015 to 2017.

	2015				2016				2017			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4
Number of computers sold	13	31	29	45	20	32	25	47	27	40	30	58

(a) Complete this graph using the information for 2017.

Year and quarter
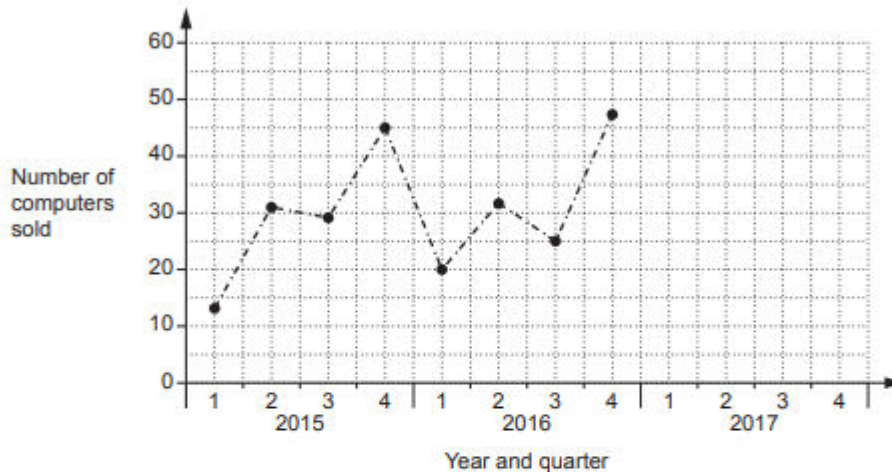
[2]

(b) Tom adds the three results for quarter 1 and he adds the three results for quarter 4.
Tom says

The ratio of the **total** number of computers sold in quarter 1 compared to quarter 4 is
2 : 5.

Is he correct?
Show your reasoning.

[2]

(c) Make two comments about Tom's sales over the period 2015 to 2017.

Comment 1 ....

....

Comment 2 ....

.... **[2]**

(d) Tom predicts that he will sell more than 60 computers in the 4th quarter of 2018.
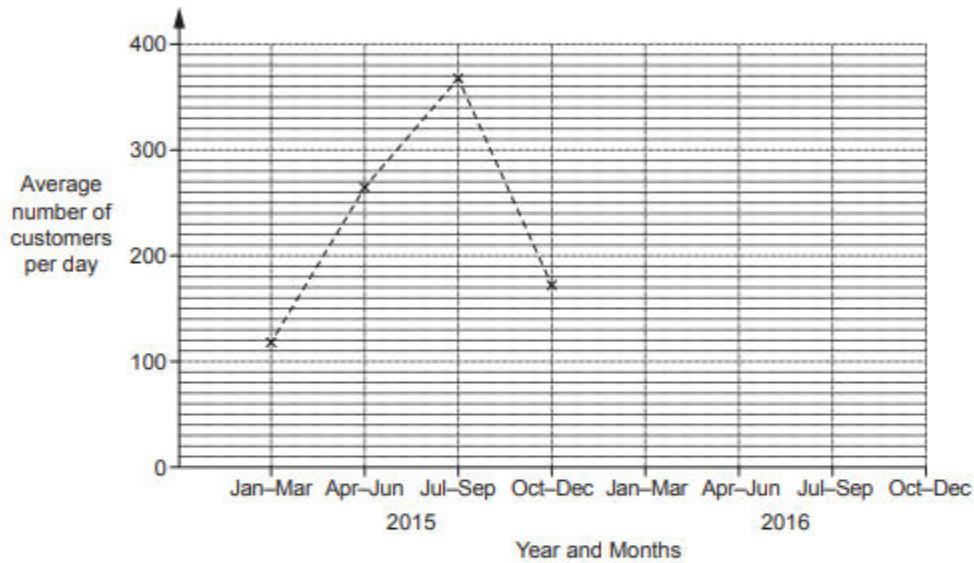
What assumption has he made?

....

.... **[1]**

17.

8 The table shows the average number of customers per day entering a shop.

Months	2015				2016			
	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec
Average number of customers per day	119	264	368	172	130	304	381	192

(a) Complete the time series graph below.

[2]

(b) Make two different comments comparing the number of customers entering the shop in 2015 and 2016.

Comment 1 ....

....

....

Comment 2 ....

....

....
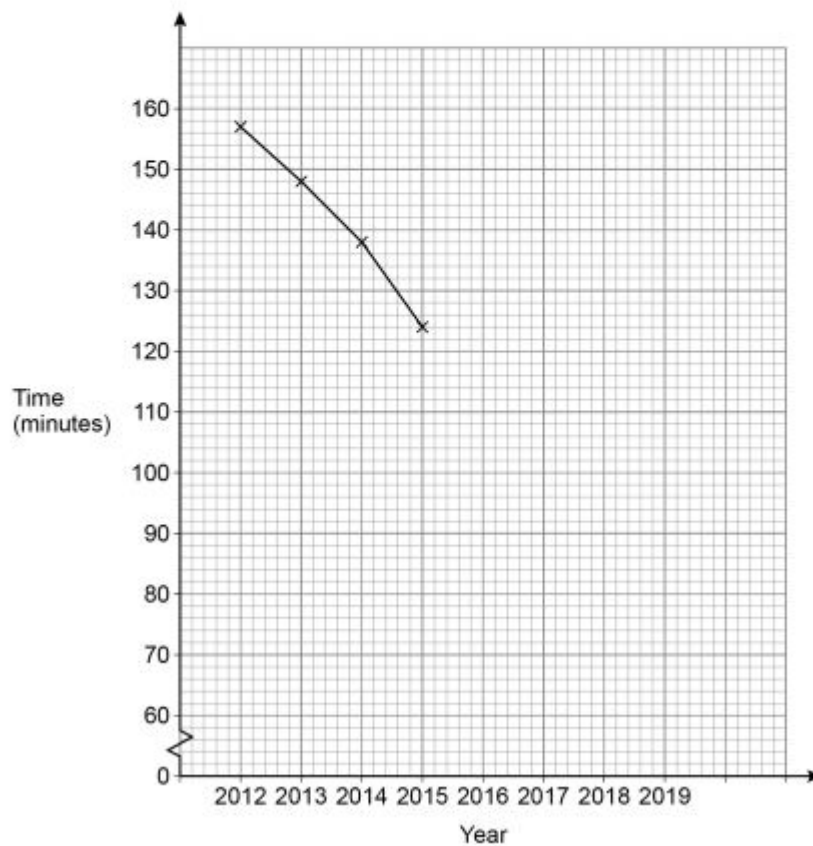
[2]

5   The time students spent watching TV was recorded.

The table shows the average daily time per student each year from 2012 to 2019

Year	2012	2013	2014	2015	2016	2017	2018	2019
Time (minutes)	157	148	138	124	113	100	90	82

A time series graph is drawn to represent the data.

The first four points have been plotted.

5 (a)   Complete the graph.

[2 marks]

5 (b)   Use the graph to estimate the average daily time per student in 2020

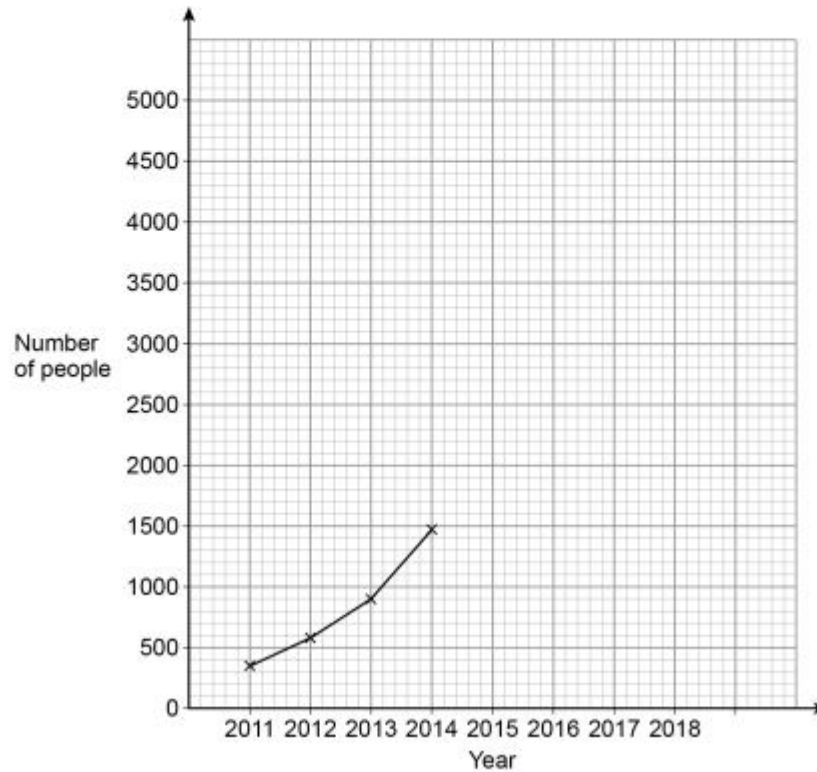[1 mark]

_____

_____

            Answer _____ minutes

19.

6 A music festival has taken place each year from 2011
The table shows the number of people who attended each year.

Year	2011	2012	2013	2014	2015	2016	2017	2018
Number of people	350	583	906	1471	2023	2612	3251	3780

The festival organisers draw a time series graph to represent the data.
The first four years have been plotted.

6 (a) Complete the graph.

[2 marks]

6 (b) Use the graph to estimate the number of people who will attend the festival in 2019

[2 marks]

Answer