Name:

Exam Style Questions

Frequency Polygons

Corbettmaths

Equipment needed: Pencil, Ruler, Pen and Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

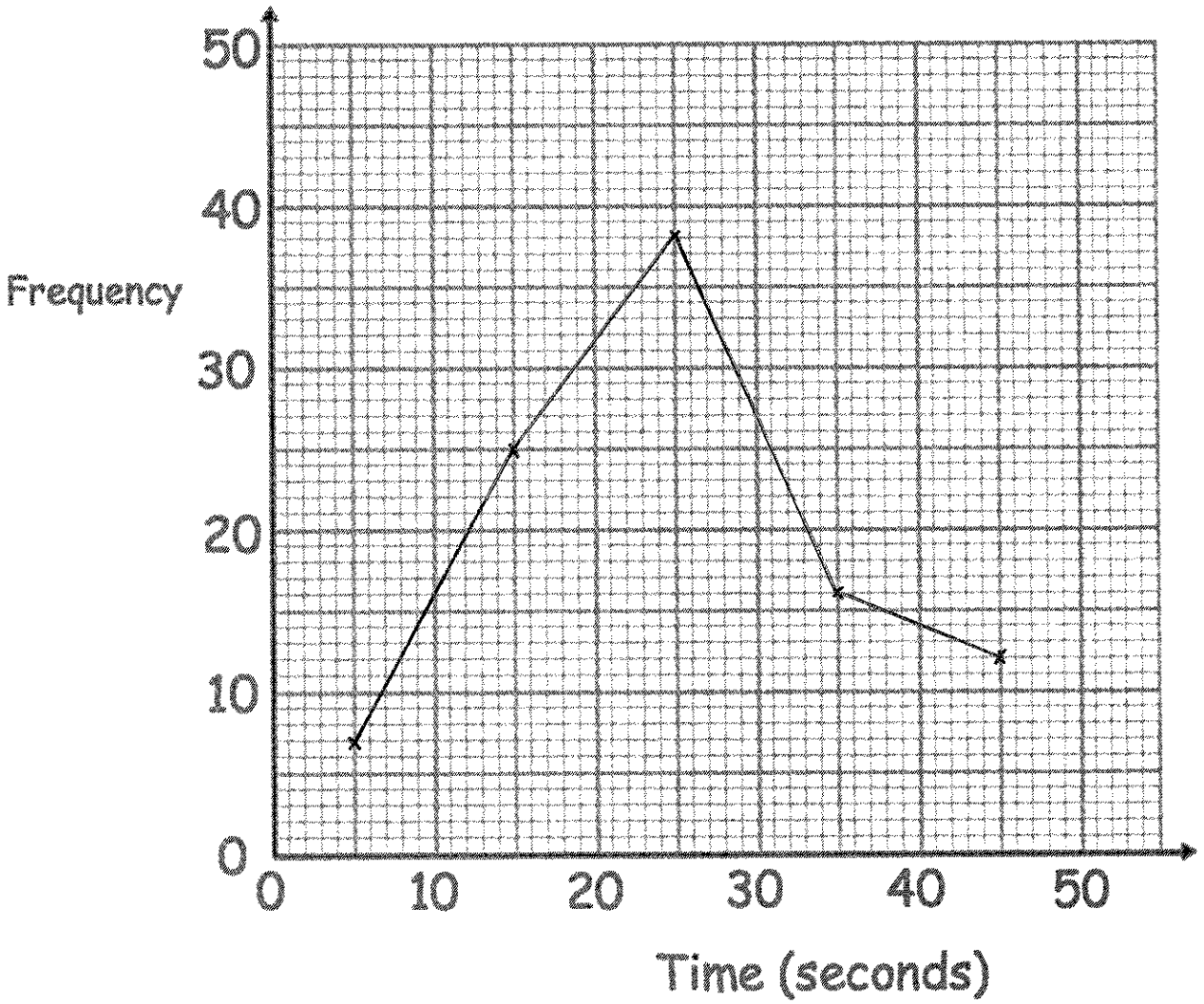
Videos 155, 156

Answers and Video Solutions

1. The table gives information about the time taken, in seconds, for students to complete a puzzle.

Time (seconds)	Frequency
$0 < t \leq 10$	7
$10 < t \leq 20$	25
$20 < t \leq 30$	38
$30 < t \leq 40$	16
$40 < t \leq 50$	12

Draw a frequency polygon for the information in the table.

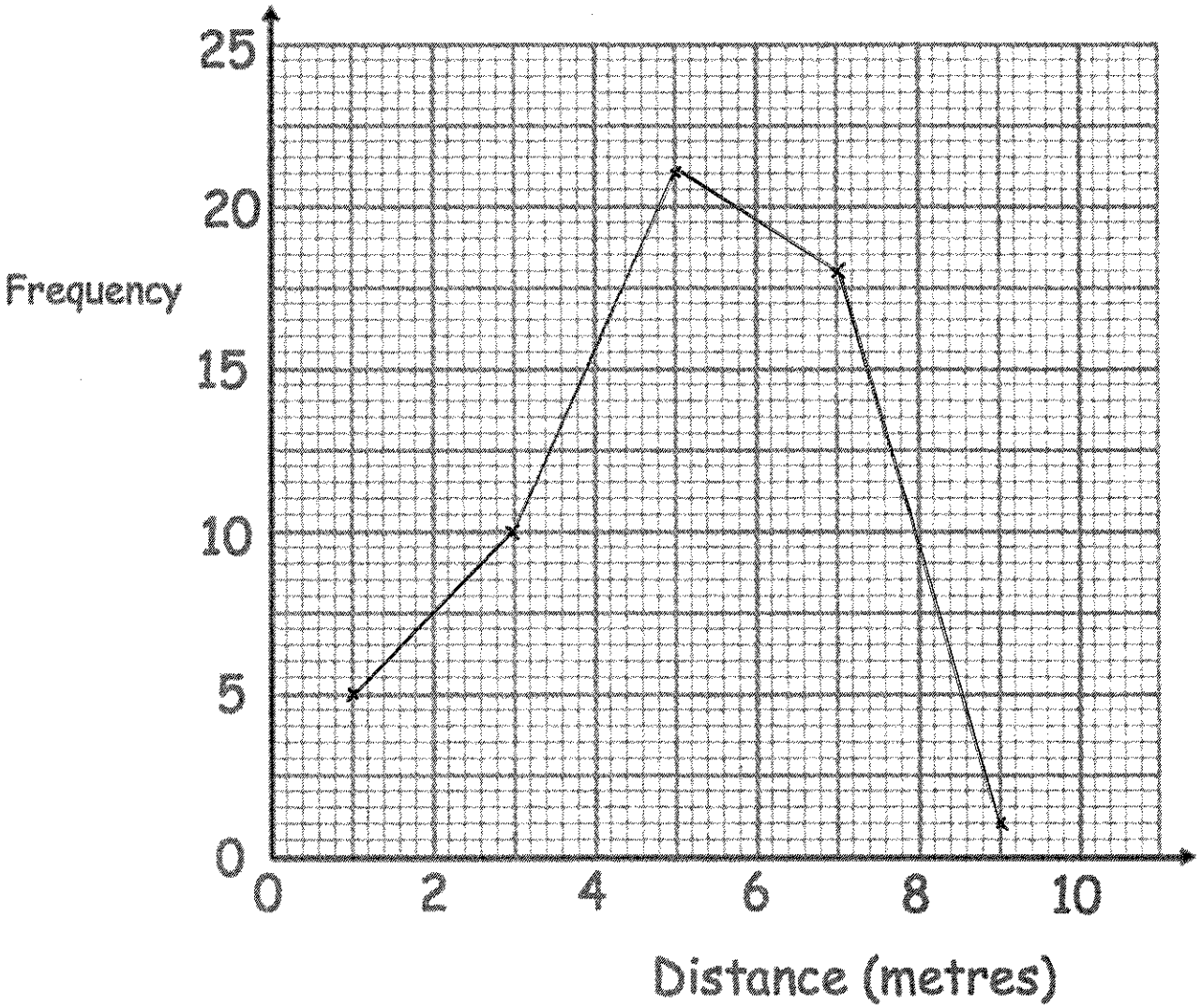


(2)

2. The table gives information about the distances thrown, in metres, at a school sports day.

Distance (m)	Frequency
$0 < d \leq 2$	5
$2 < d \leq 4$	10
$4 < d \leq 6$	21
$6 < d \leq 8$	18
$8 < d \leq 10$	1

Draw a frequency polygon for the information in the table.

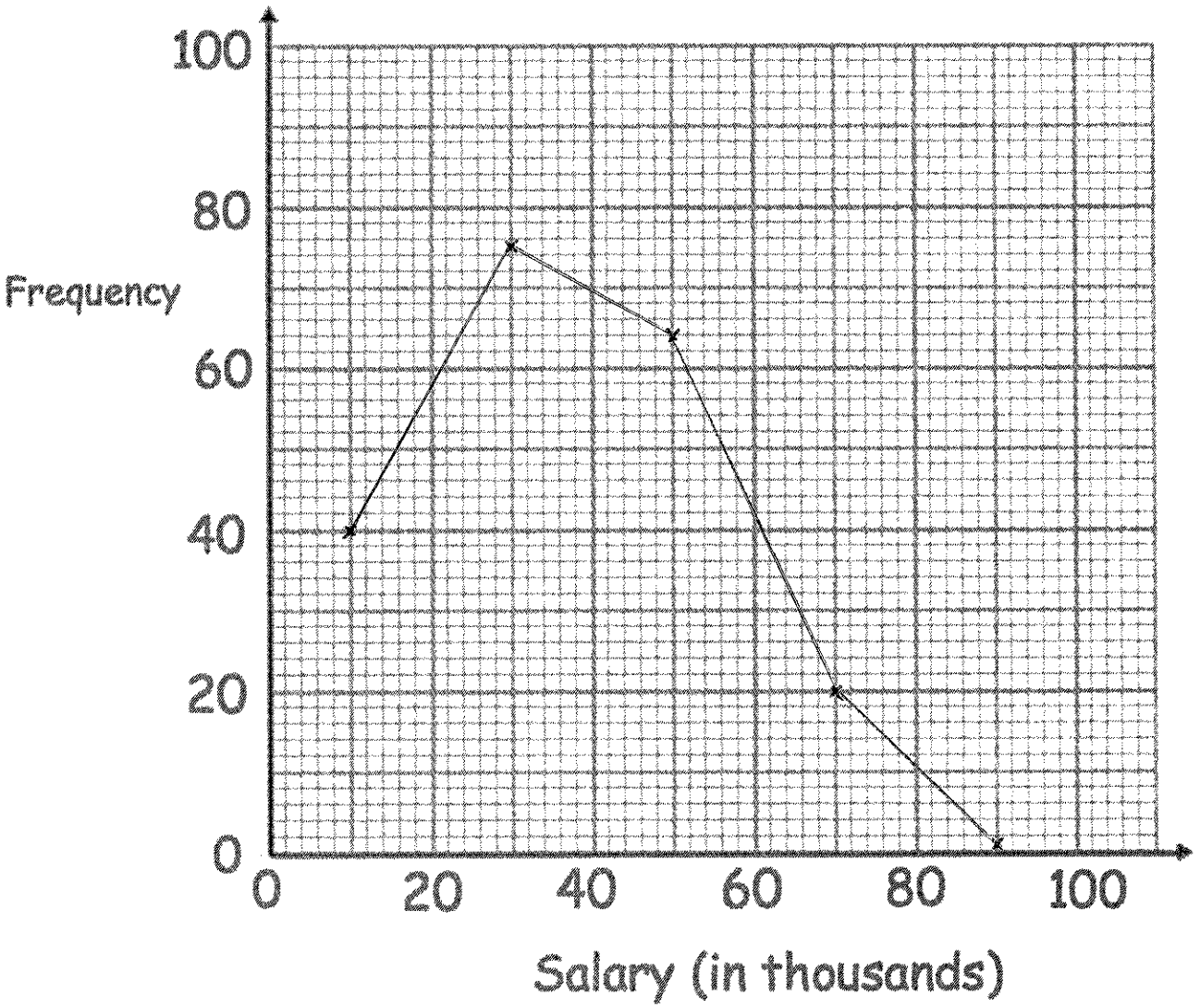


(2)

3. The table gives information about the income of 200 households in a village.

Income (thousands)	Frequency
$0 < I \leq 20$	40
$20 < I \leq 40$	75
$40 < I \leq 60$	64
$60 < I \leq 80$	20
$80 < I \leq 100$	1

Draw a frequency polygon for the information in the table.

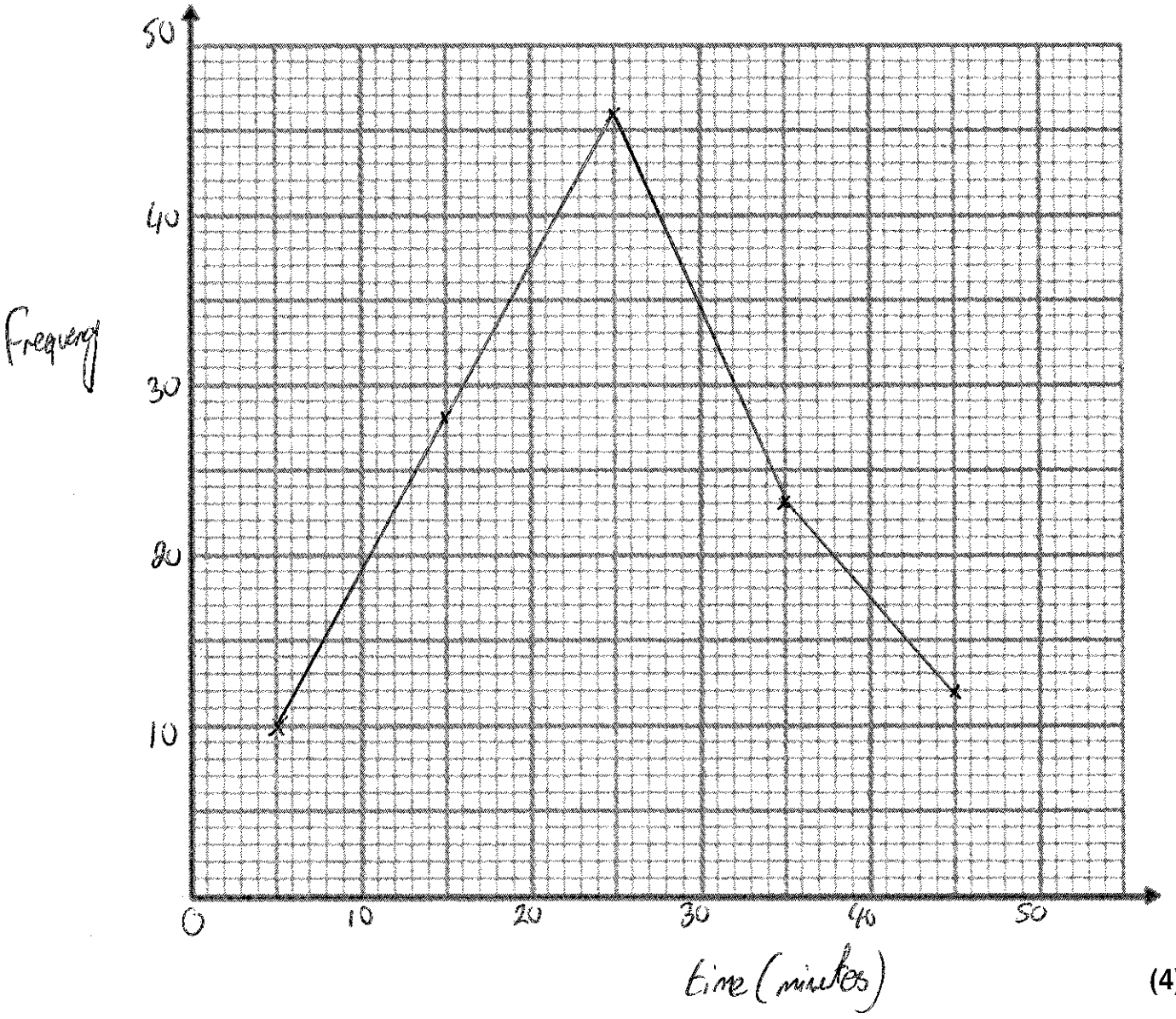


(2)

4. The table shows information about the time taken for teachers to travel to work.

Time (minutes)	Frequency
$0 < t \leq 10$	10
$10 < t \leq 20$	28
$20 < t \leq 30$	46
$30 < t \leq 40$	23
$40 < t \leq 50$	12

Draw a frequency polygon for the information in the table.

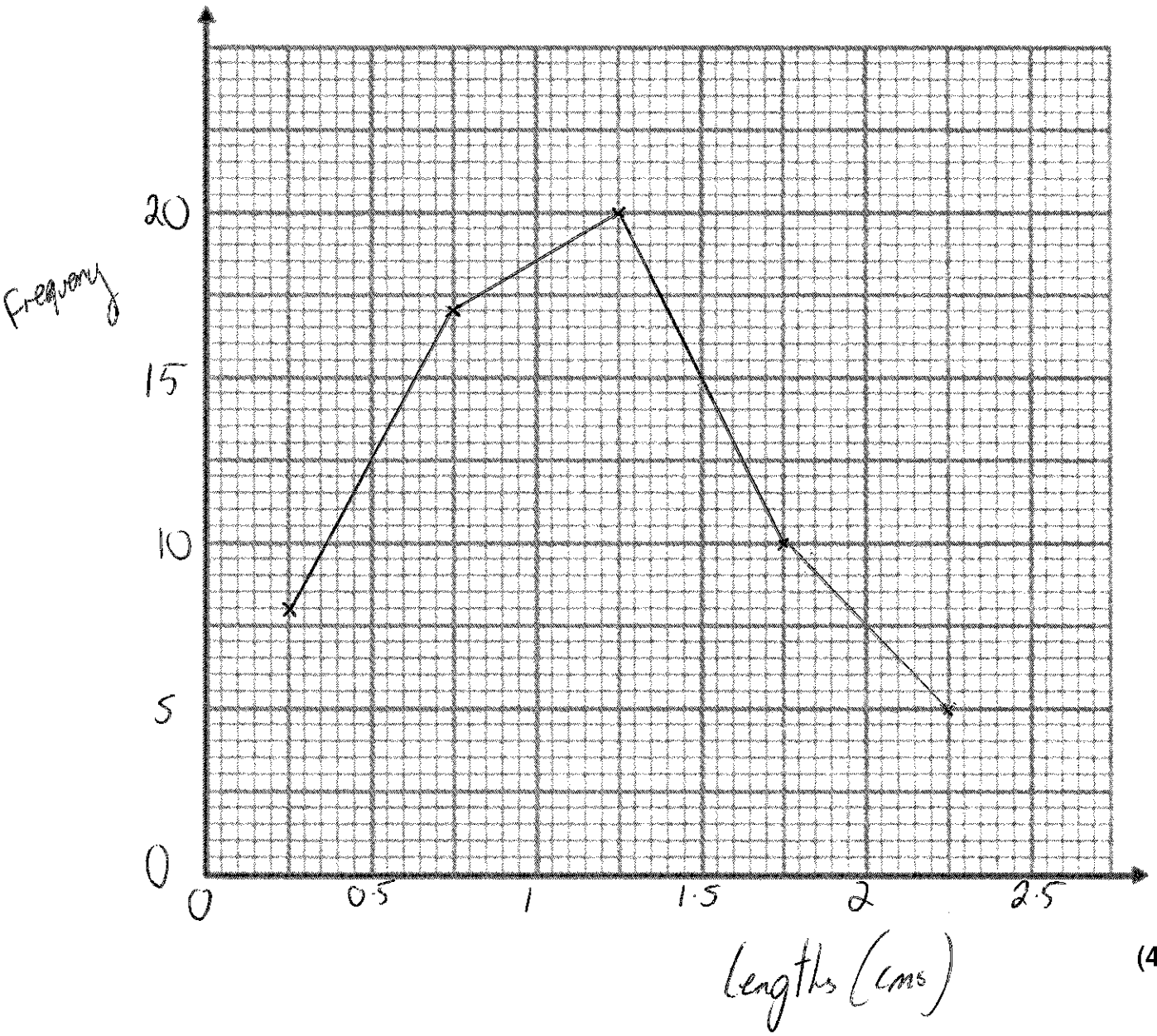


(4)

5. The table shows information about the lengths of 60 spiders.

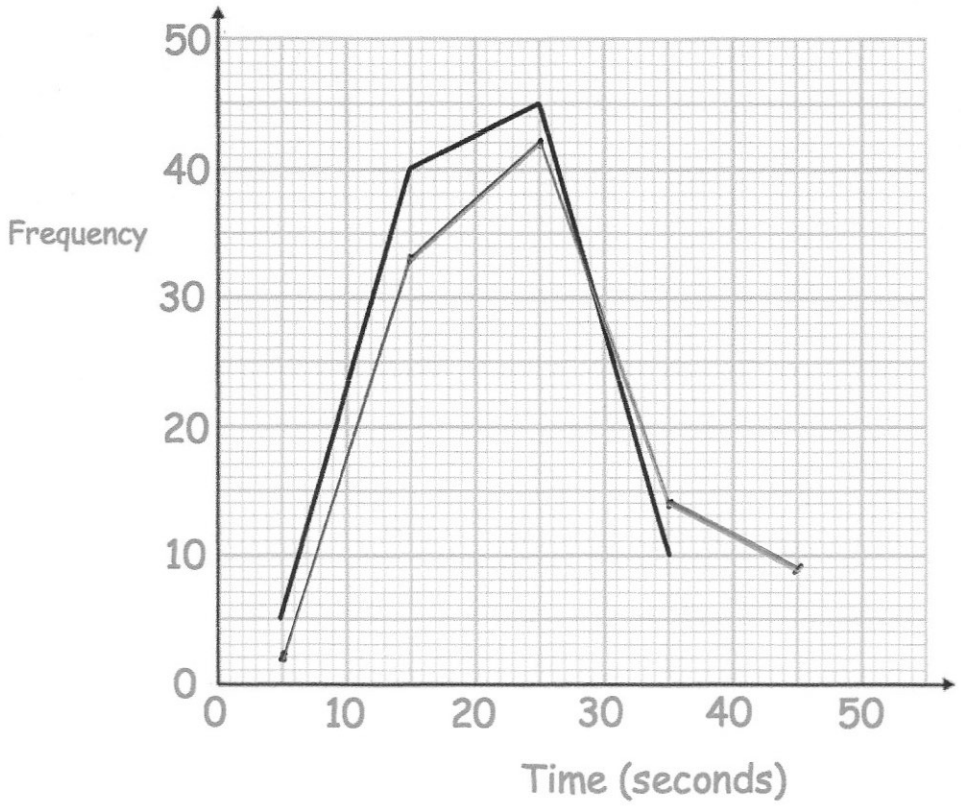
Lengths (cm)	Frequency
$0 < L \leq 0.5$	8
$0.5 < L \leq 1$	17
$1 < L \leq 1.5$	20
$1.5 < L \leq 2$	10
$2 < L \leq 2.5$	5

Draw a frequency polygon for the information in the table.



(4)

6. The frequency polygon shows the time taken for 100 students in Class A to solve a maths question.



The table shows the times taken by 100 students in Class B to answer the same question.

Time (seconds)	Frequency
$0 < t \leq 10$	2
$10 < t \leq 20$	33
$20 < t \leq 30$	42
$30 < t \leq 40$	14
$40 < t \leq 50$	9

(a) Draw a frequency polygon to show this information on the diagram above.

(2)

(b) Compare the times taken by the students in Class A and Class B.

Class A completed the puzzle in a shorter time; as their distribution is more to the left (closer to 0). Some students in Class B took longer than 40 seconds, which no student in Class A did.

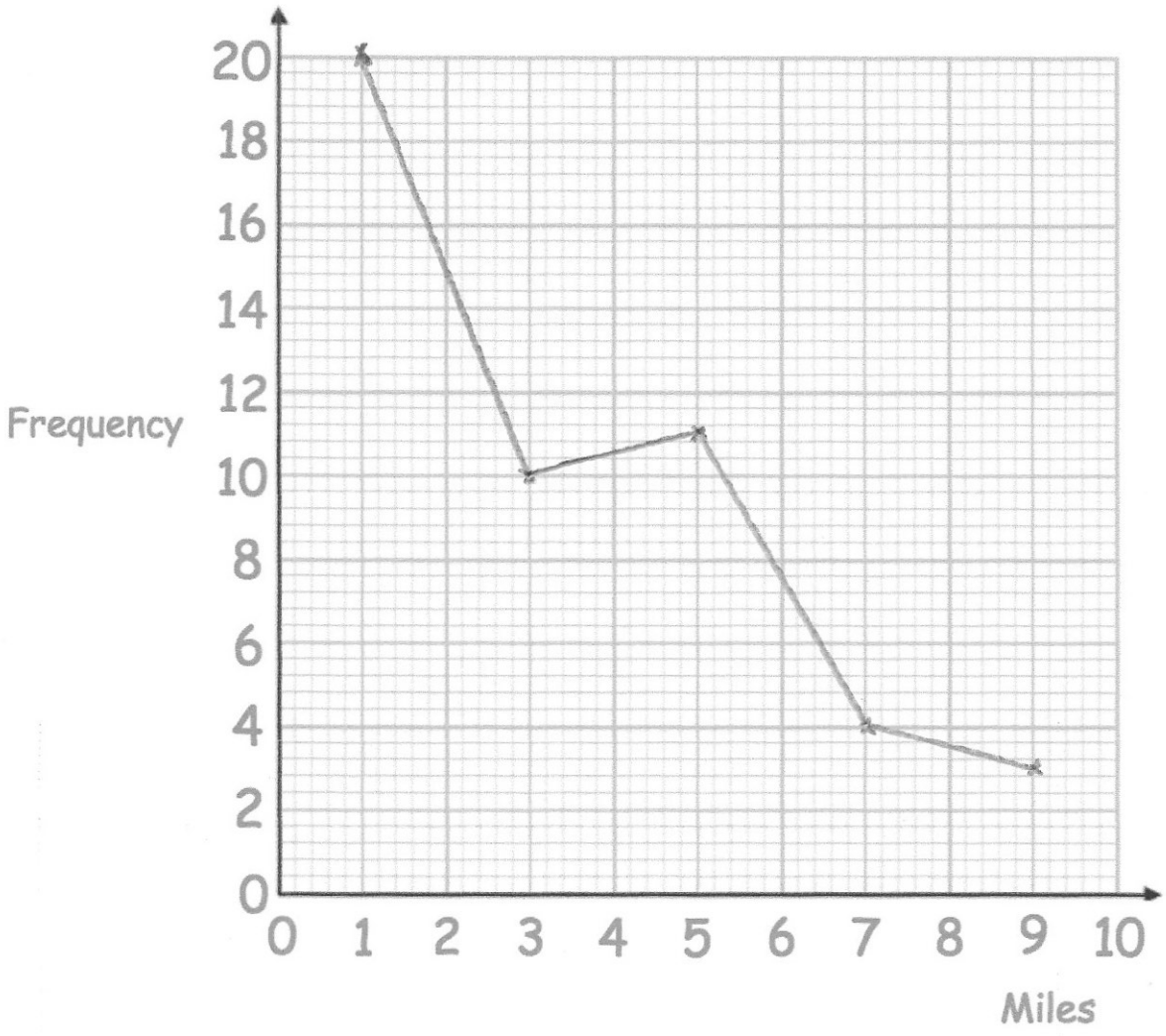
(2)

7. The table shows the distance travelled to school by 48 students.

Distance (miles)	Frequency
$0 < d \leq 2$	20
$2 < d \leq 4$	10
$4 < d \leq 6$	11
$6 < d \leq 8$	4
$8 < d \leq 10$	3

(a) Draw a frequency polygon to represent this data.

(2)



One student is chosen at random.

(b) Work out the probability that this student travels more than 6 miles to school.

$4 + 3 = 7$

$\frac{7}{48}$

.....

(1)

8. The table shows the speeds of cars travelling through a village.

Speed, x mph	Frequency
$0 < x \leq 10$	6
$10 < x \leq 20$	22
$20 < x \leq 30$	90
$30 < x \leq 40$ ✓	80
$40 < x \leq 50$	42

* 28, 118, 198, 240

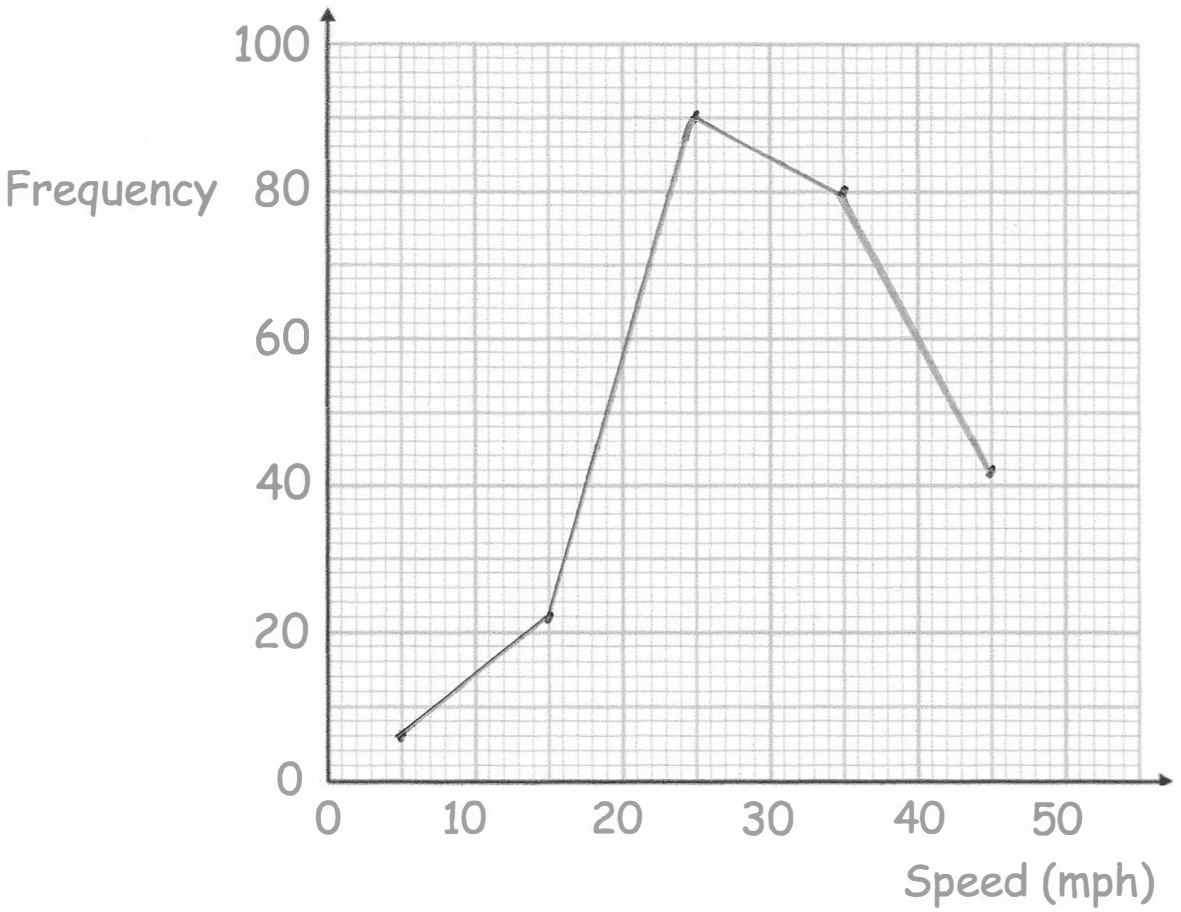
(a) Find the class interval that contains the median.

either $\frac{240}{2} = 120^{th}$ or $\frac{241}{2} = 120.5^{th}$

$30 < x \leq 40$

(1)

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

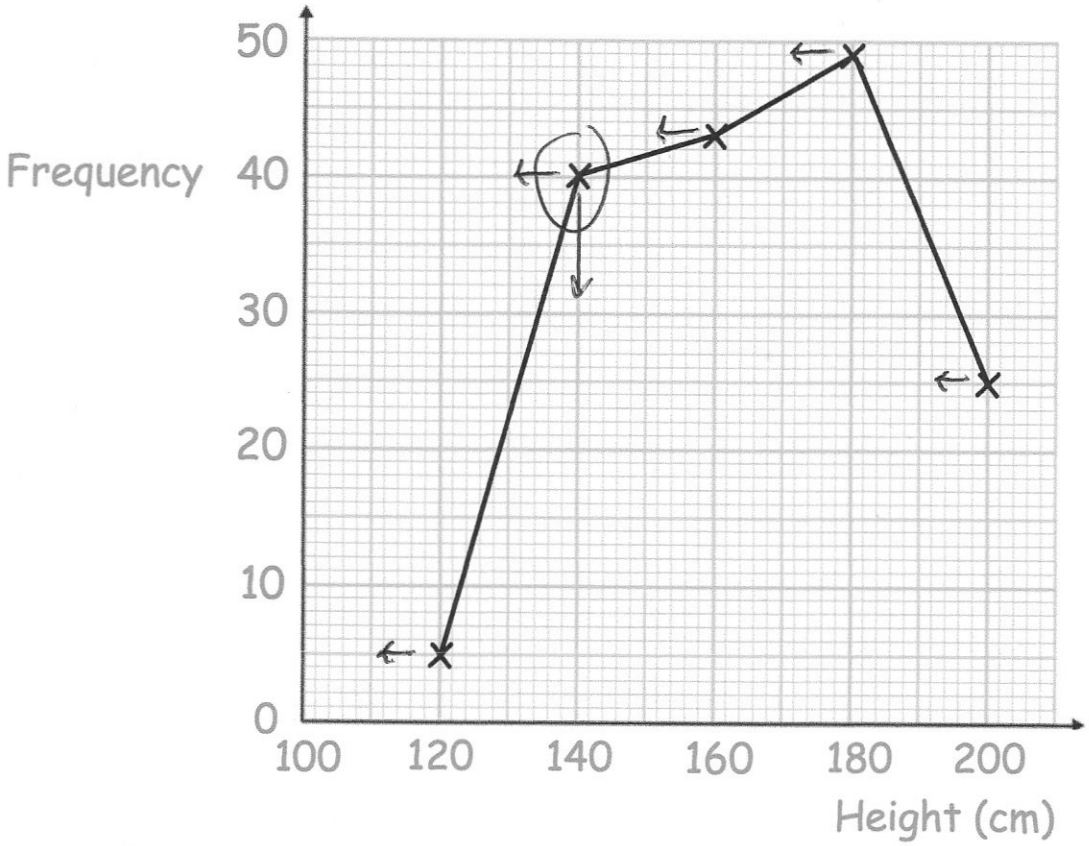


(2)

9. The table shows information about the heights of 152 people.

Height (h cm)	Frequency
$100 < h \leq 120$	5
$120 < h \leq 140$	30
$140 < h \leq 160$	43
$160 < h \leq 180$	49
$180 < h \leq 200$	25

Zoey draws a frequency polygon for the information in the table.



Write down two mistakes that Zoey has made.

Mistake 1 The points should be plotted in the middle of each category. eg: (110, 5) not (120, 5)

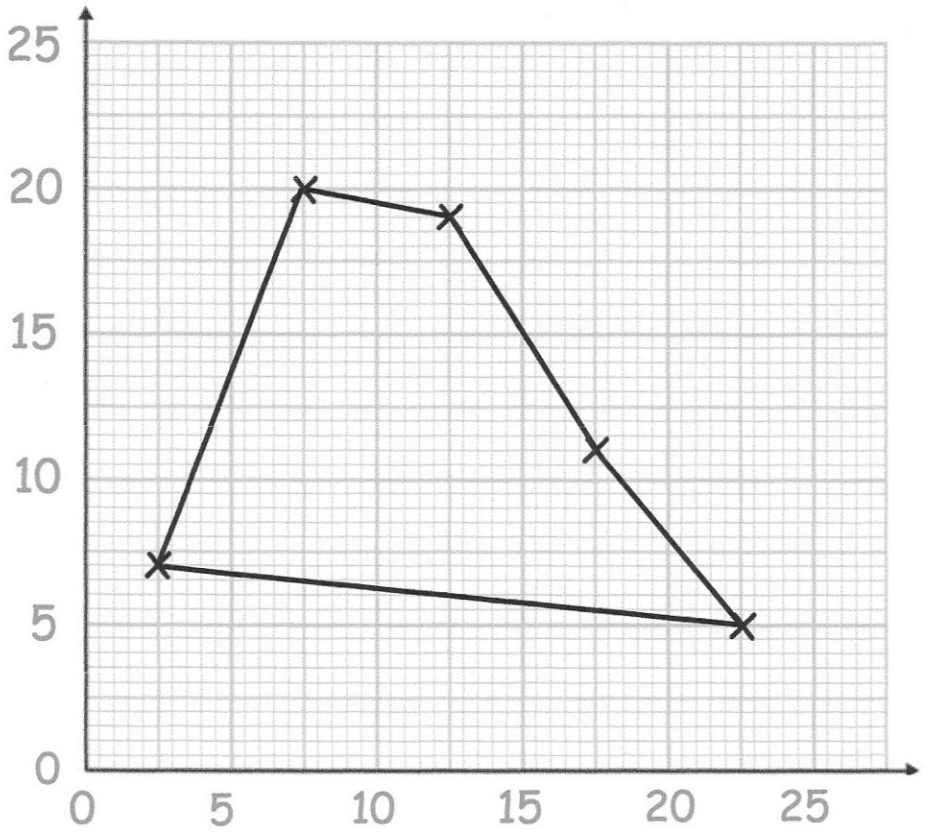
Mistake 2 The height of the second point should be 30 and not 40 (110, 30)

(2)

10. The table shows information about the donations 62 people made to charity.

Donation, £x	Frequency
$0 < x \leq 5$	7
$5 < x \leq 10$	20
$10 < x \leq 15$	19
$15 < x \leq 20$	11
$20 < x \leq 25$	5

Humphrey draws a frequency polygon for the information in the table.



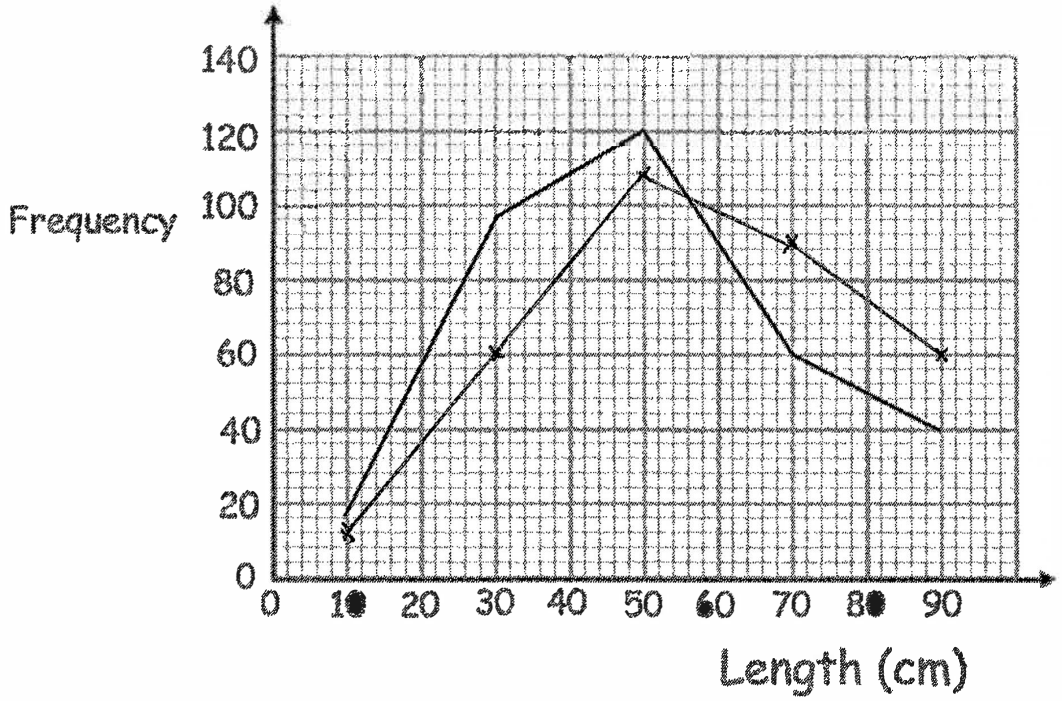
Write down two mistakes that Humphrey has made.

Mistake 1 The first point should not be joined to the last point.

Mistake 2 The axes should be labelled. Vertical - frequency horizontal - donation.

(2)

11. The frequency polygon shows the length of 330 river eels.



The table shows the lengths of 330 sea eels.

Length (cm)	Frequency	midpoint	fx
$0 < t \leq 20$	12	10	120
$20 < t \leq 40$	60	30	1800
$40 < t \leq 60$	108	50	5400
$60 < t \leq 80$	90	70	6300
$80 < t \leq 100$	60	90	+ 5400
	330		19020

(a) Draw a frequency polygon to show this information on the diagram above.

(2)

(b) Calculate an estimate of the mean length of a sea eel.

19020 ÷ 330

57.6363..

.....cm

(3)

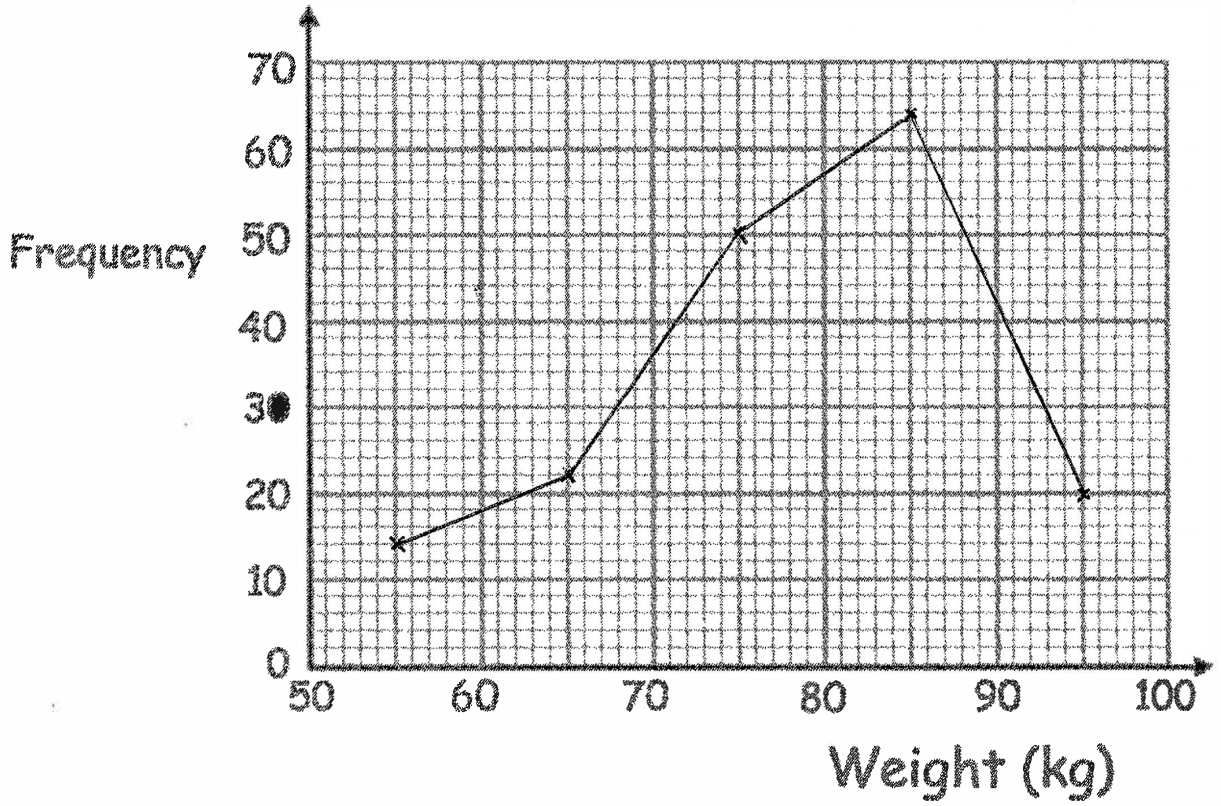
12. The frequency table gives information about the weight of some rugby players.

Weight (kg)	Frequency
$50 < w \leq 60$	14
$60 < w \leq 70$	22
$70 < w \leq 80$	50
$80 < w \leq 90$	64
$90 < w \leq 100$	20

170

(a) Draw a frequency polygon to represent this data.

(2)



(b) Write down the modal class interval.

$80 < w \leq 90$

.....

(1)

One player is chosen at random.

(c) Work out the probability that this player is more than 90kg.

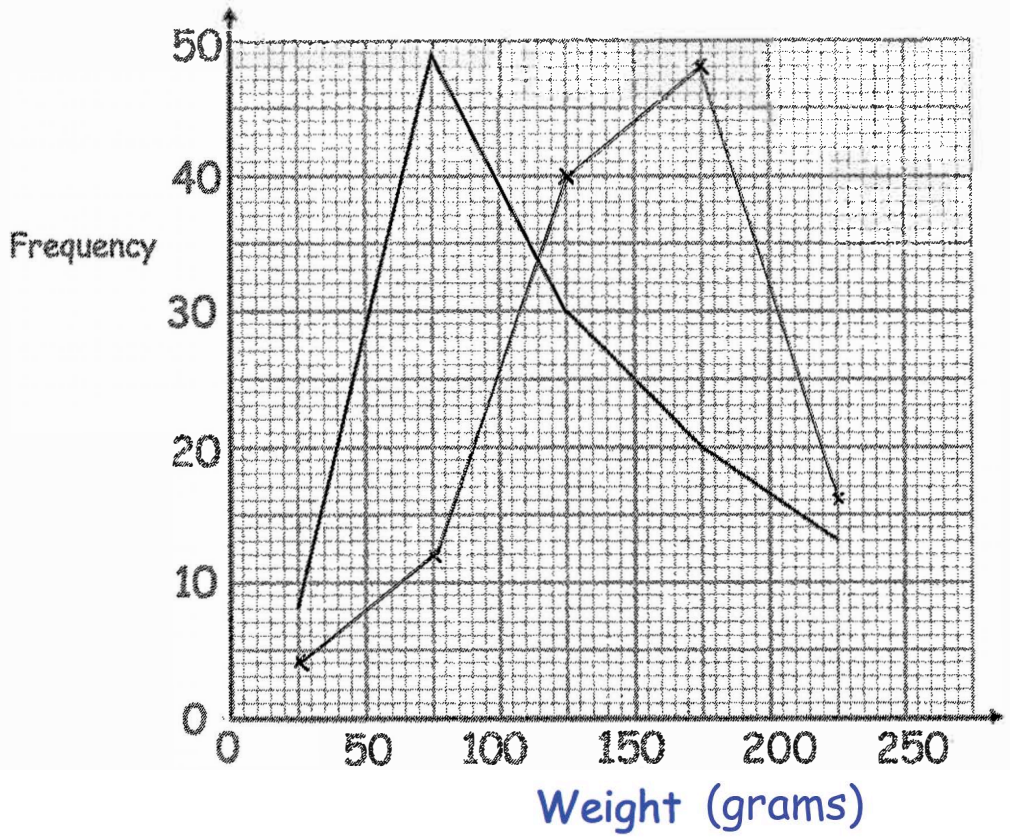
$\frac{20}{170}$

$\frac{2}{17}$

.....

(1)

13. The frequency polygon shows the weights of 120 red apples.



The table shows the weights of 120 green apples from the same orchard.

Weight (grams)	Frequency
$0 < w \leq 50$	4
$50 < w \leq 100$	12
$100 < w \leq 150$	40
$150 < w \leq 200$	48
$200 < w \leq 250$	16

(a) Draw a frequency polygon to show this information on the diagram above.

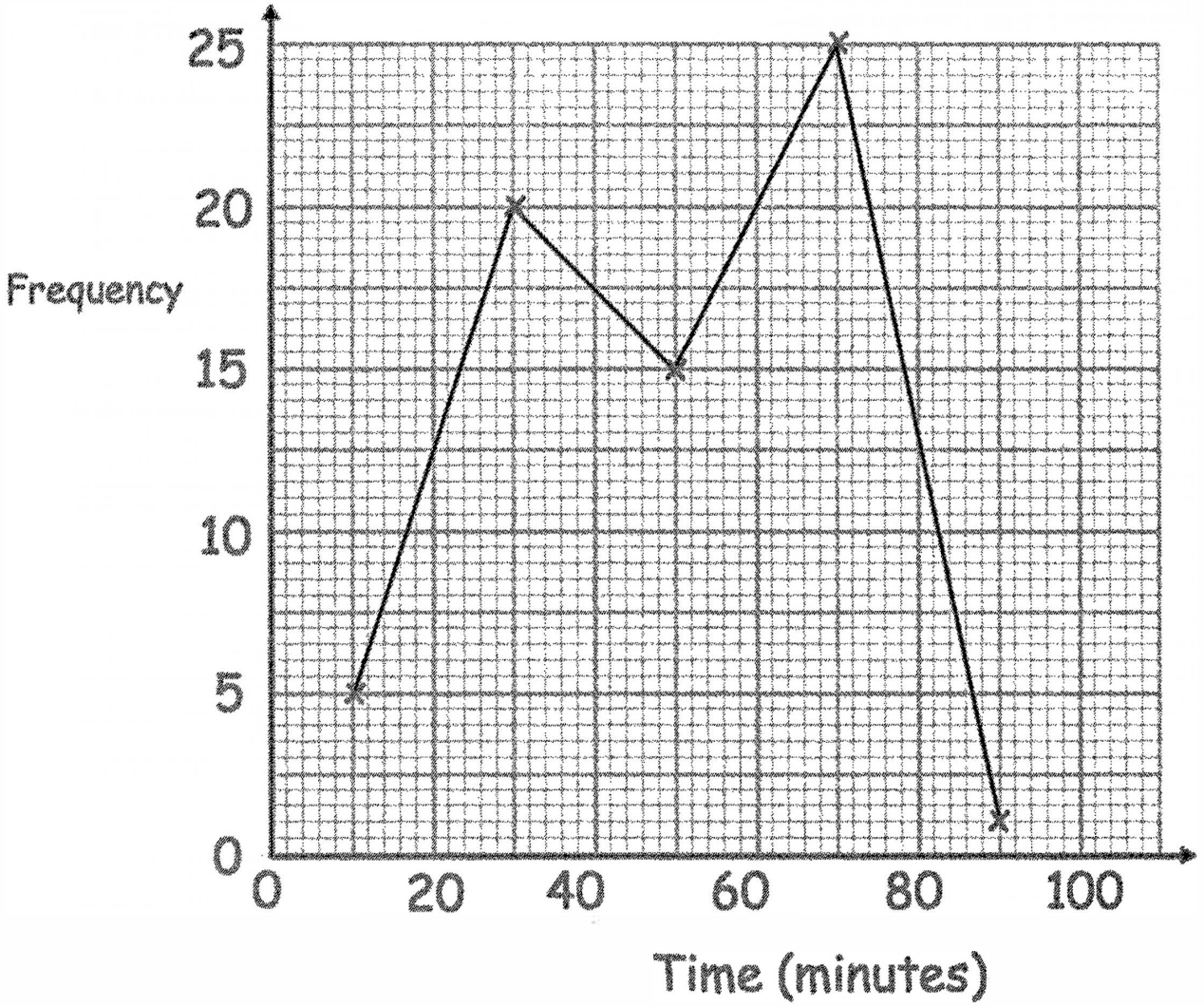
(2)

(b) Compare the two distributions.

The weights of the green apples are heavier than the red apples, the peak for the green apples is much further to the right.

(2)

14. The frequency polygon shows information on how long people spend in a swimming pool.



Calculate an estimate of the mean time spent in the swimming pool.

time	frequency	midpoint	fx
$0 < t \leq 20$	5	10	50
$20 < t \leq 40$	20	30	600
$40 < t \leq 60$	15	50	750
$60 < t \leq 80$	25	70	1750
$80 < t \leq 100$	1	90	90
	66		3240

$3240 \div 66 = 49.0909\ldots$

49.09 minutes

(3)