

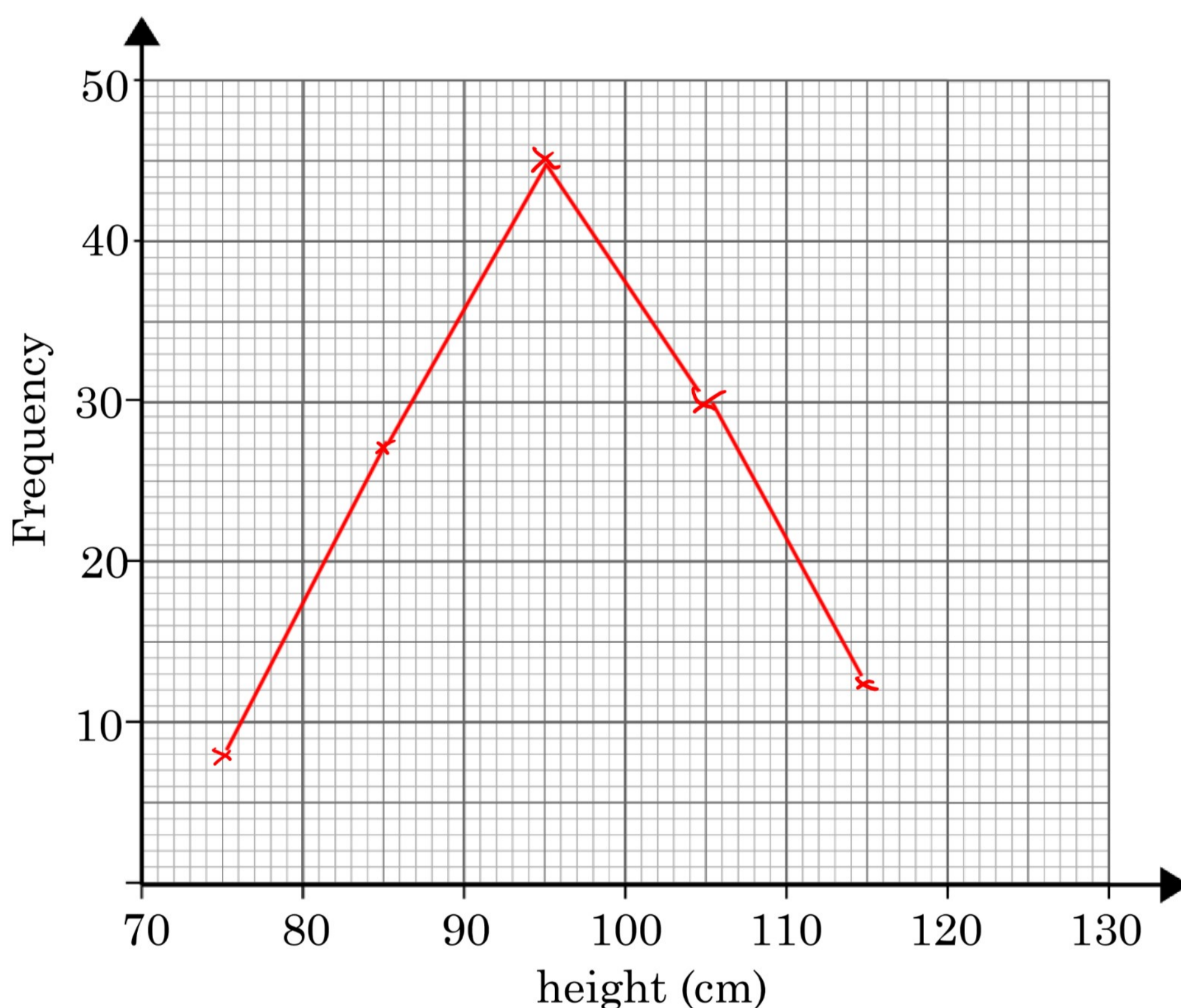


## Frequency Polygons Exam Practice

Q1. The table below shows the height of some plants measured in cm.

Height of plant (to nearest cm)	Frequency	Mid-point
$70 \leq h < 80$	8	75
$80 \leq h < 90$	27	85
$90 \leq h < 100$	45	95
$100 \leq h < 110$	30	105
$110 \leq h < 120$	13	115

Draw a frequency polygon on the grid below



Answer: \_\_\_\_\_

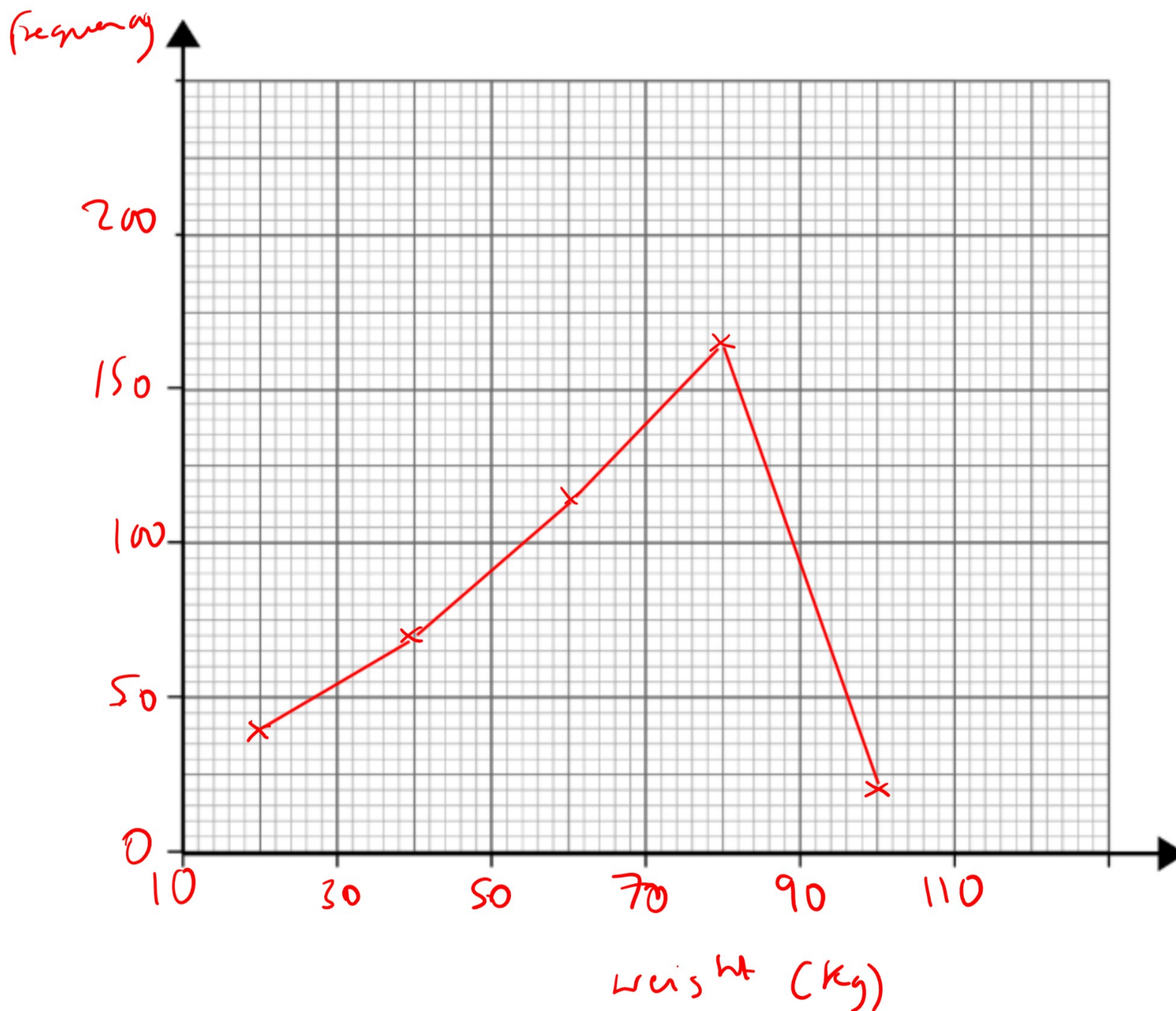
(2 marks)



Q2. The table below shows the weight of some dogs measured in kg.

Weight of a dog (Kg)	Frequency
$10 \leq w < 30$	40
$30 \leq w < 50$	70
$50 \leq w < 70$	115
$70 \leq w < 90$	165
$90 \leq w < 110$	20

Draw a frequency polygon on the grid below

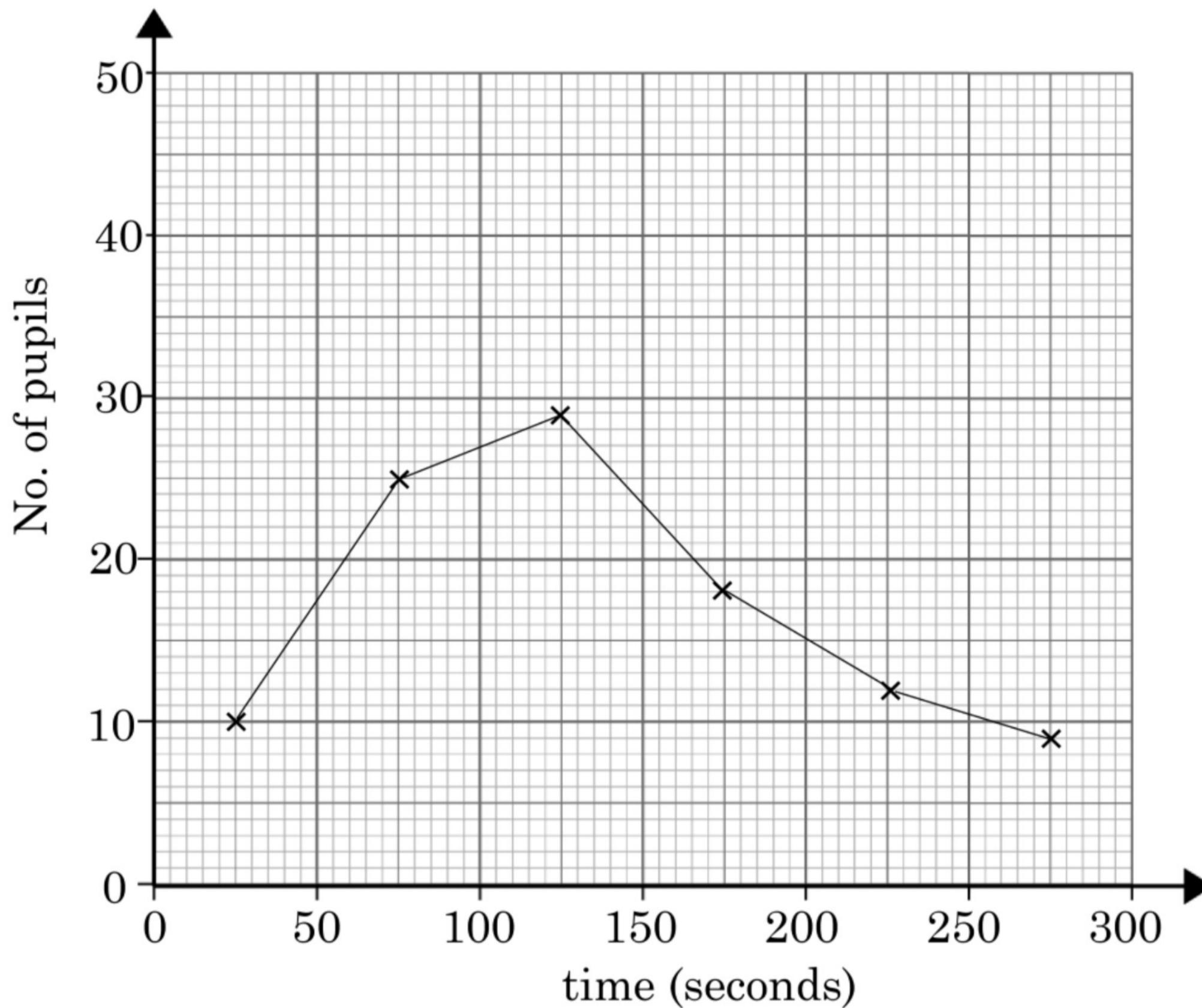


Answer: \_\_\_\_\_

(3 marks)



Q3. The frequency polygon below shows the time in seconds for some pupils to complete a puzzle.



Estimate the mean time taken by the pupils to complete the puzzle.

Time (s)	Frequency	mid $\times$ freq
$0 \leq t < 50$	10	250
$50 \leq t < 100$	25	1875
$100 \leq t < 150$	29	3675
$150 \leq t < 200$	18	3150
$200 \leq t < 250$	12	2700
$250 \leq t < 300$	9	2475
	107	14075

$$\text{mean} \approx \frac{14075}{107} = 136.65\dots$$

Answer: \_\_\_\_\_

136.7 s

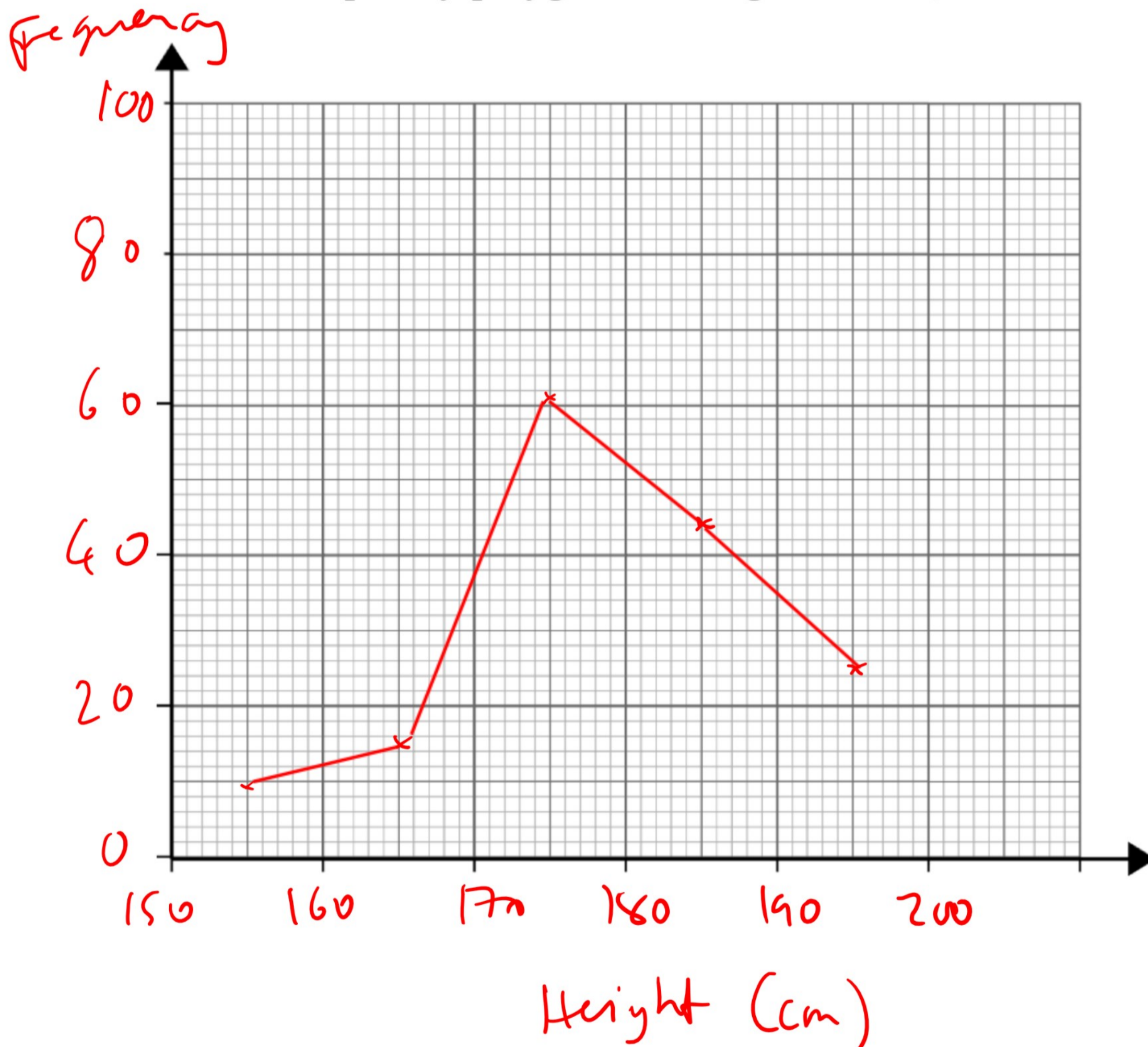
(4 marks)



Q4. The table below shows the height of some people measured in cm.

Height (cm)	Cumulative Frequency	Frequency
$150 \leq h < 160$	9	9
$160 \leq h < 170$	24	15
$170 \leq h < 180$	86	62
$180 \leq h < 190$	130	44
$190 \leq h < 200$	155	25

Draw a frequency polygon on the grid below,

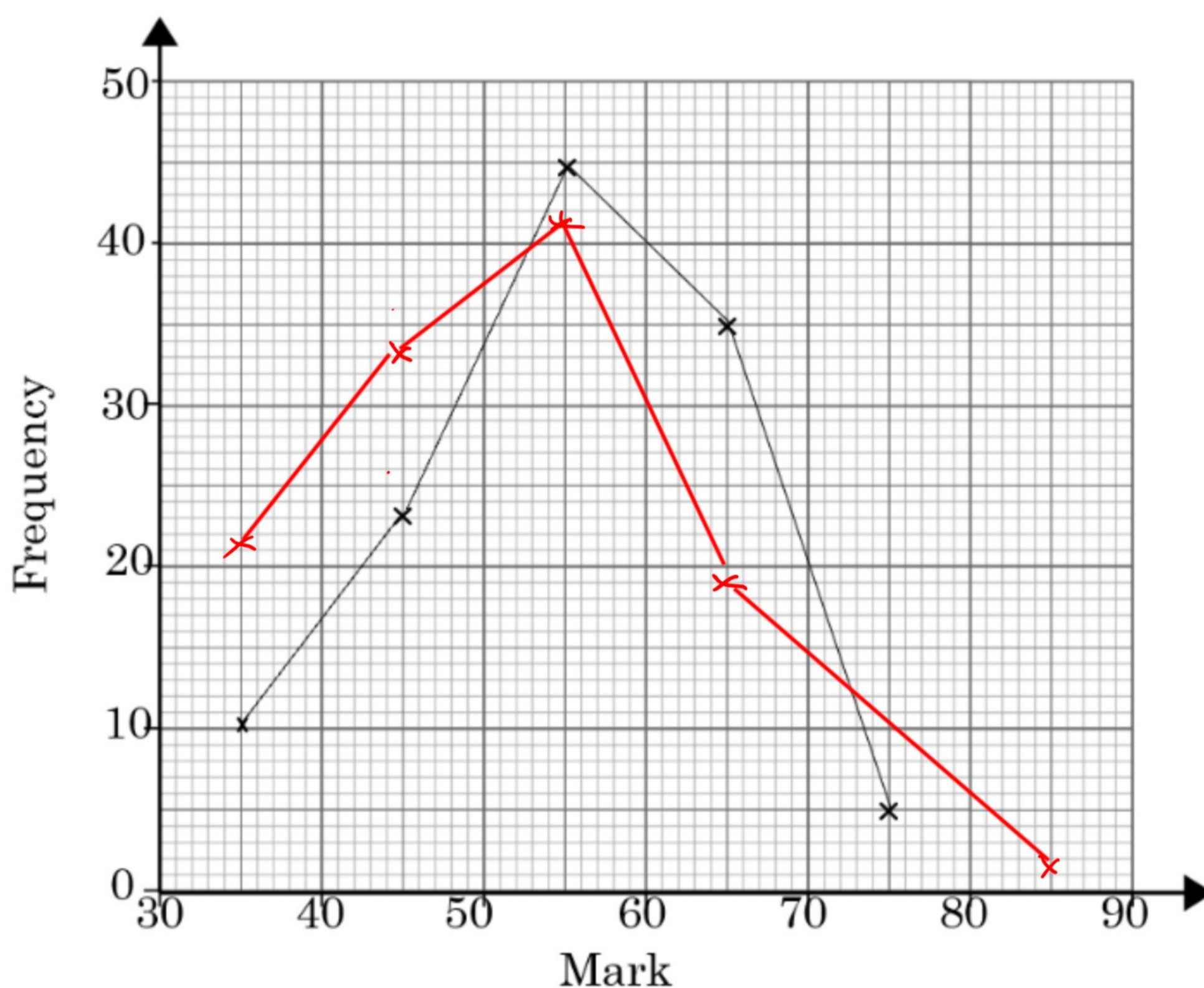


Answer: \_\_\_\_\_

(4 marks)



Q5. The frequency polygon shows the marks scored by some boys in a history exam.



On the same grid, draw a frequency polygon for the data below, which shows the results of the girls in the same history test.

Mark	Frequency
$30 \leq m < 40$	21
$40 \leq m < 50$	34
$50 \leq m < 60$	41
$60 \leq m < 70$	19
$70 \leq m < 80$	2

Answer: \_\_\_\_\_  
(2 marks)

Compare the scores of the boys and the girls scores in the history exam.

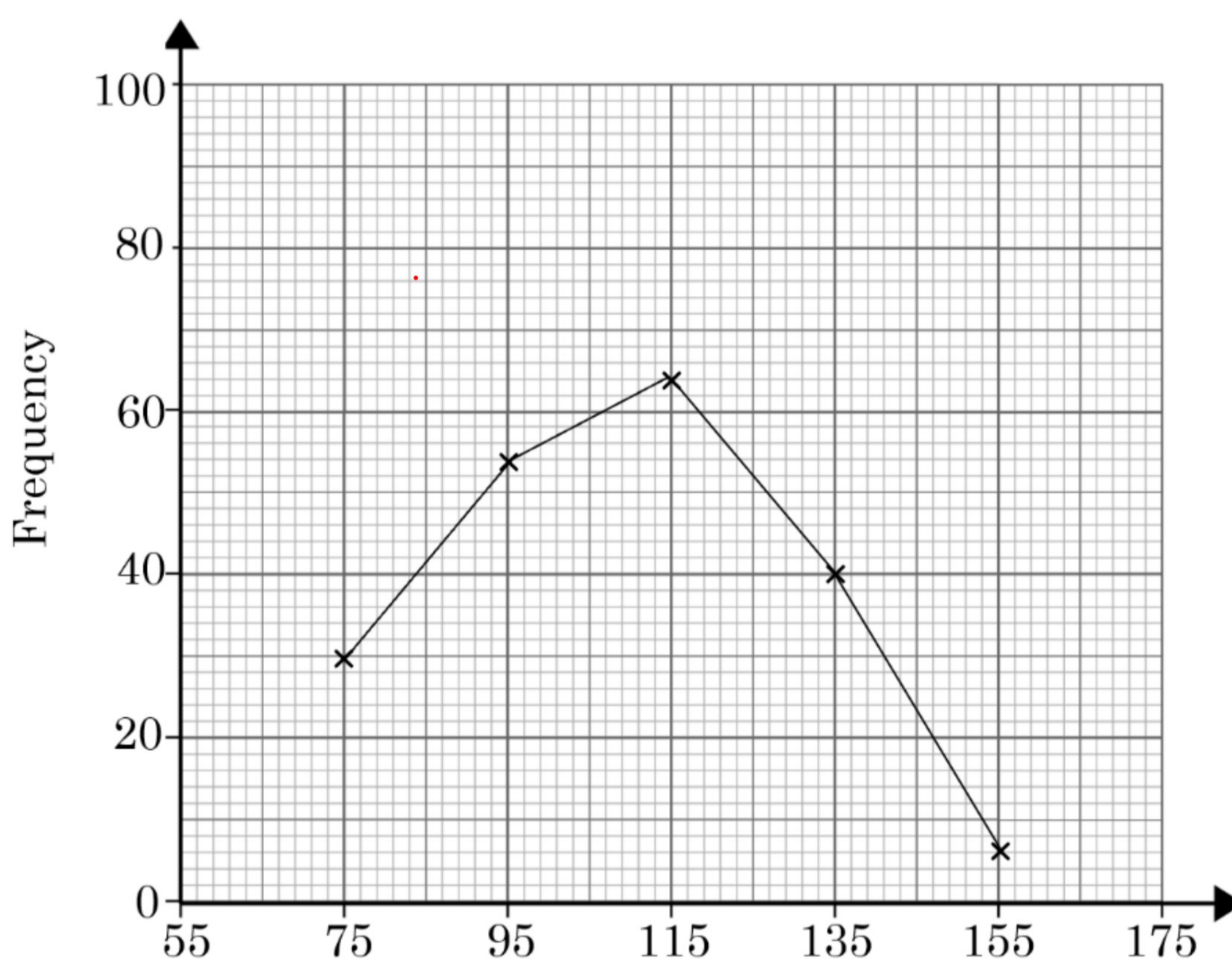
*The girls scored generally lower than the boys, although the highest 2 students were girls in 80-90; no boys scored above 80.*

Answer: \_\_\_\_\_  
(2 marks)



Q6. Fiona has collected data on the weight of pupils in year 8 at her school. She uses it to draw the frequency polygon shown below:

Weight of pupils in year 8 (pounds)	Frequency
$75 \leq w < 95$	30
$95 \leq w < 115$	54
$115 \leq w < 135$	62
$135 \leq w < 155$	40
$155 \leq w < 175$	6



Identify three errors which she has made.

- the mid-points of each class have not been used to plot the points
- no label on horizontal axis
- 3rd point is plotted incorrectly as 64, not 62

Answer: \_\_\_\_\_

(3 marks)



Q7. The amount of rainfall during a period of time was recorded in mm.

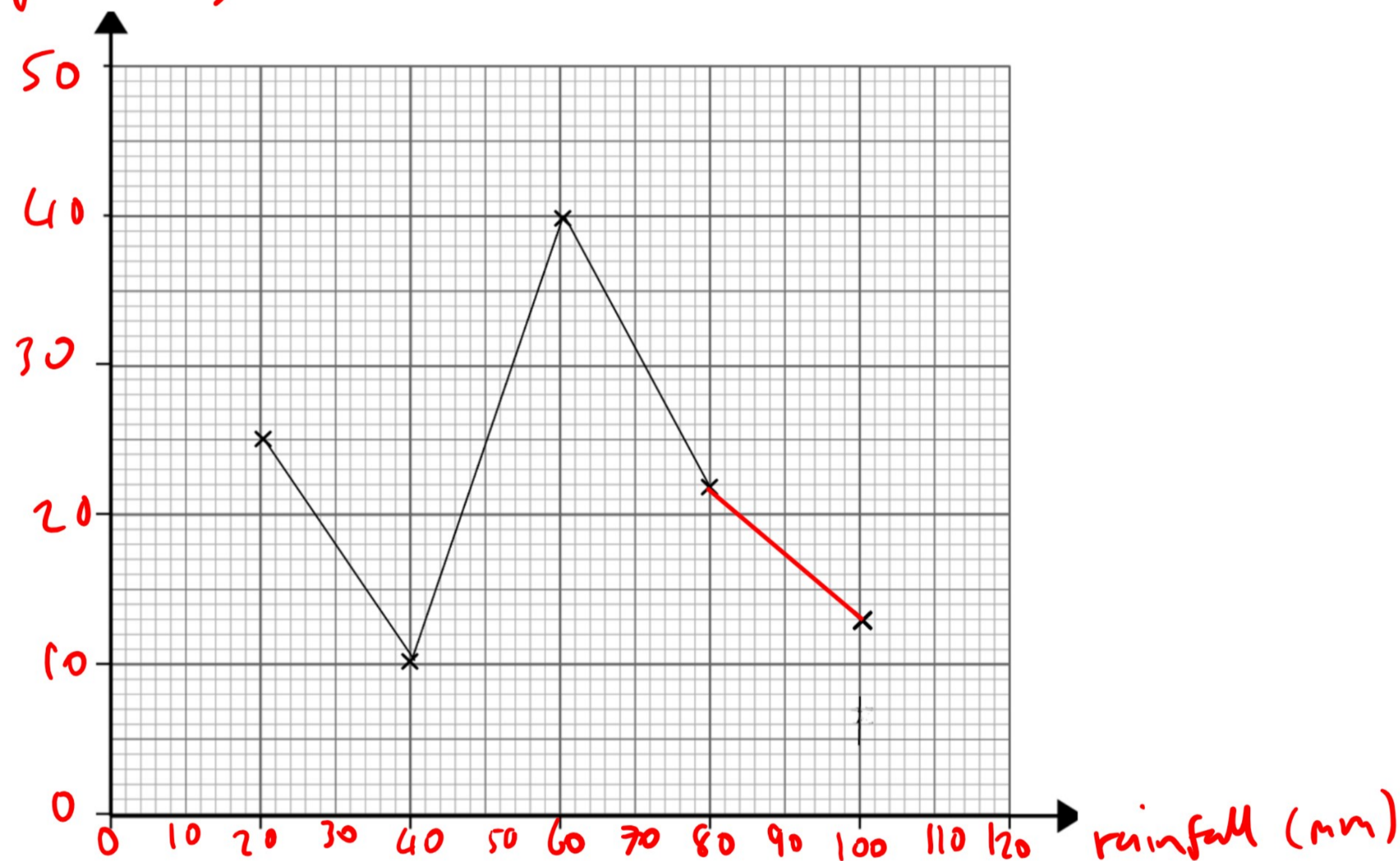
a) Complete both the frequency table and the frequency polygon using the information, labelling both axes.

Amount of rainfall (mm)	Frequency
$10 \leq r < 30$	35
$30 \leq r < 50$	10
	40
$70 \leq r < 90$	22
$90 \leq r < 110$	13

Answer: \_\_\_\_\_

(4 marks)

frequency



b) Write down the modal class.

Answer:  $15 \leq r < 20$   
(1 mark)

c) A day is selected at random. What is the probability that there was more than 30mm of rainfall?

$$\frac{85}{120}$$

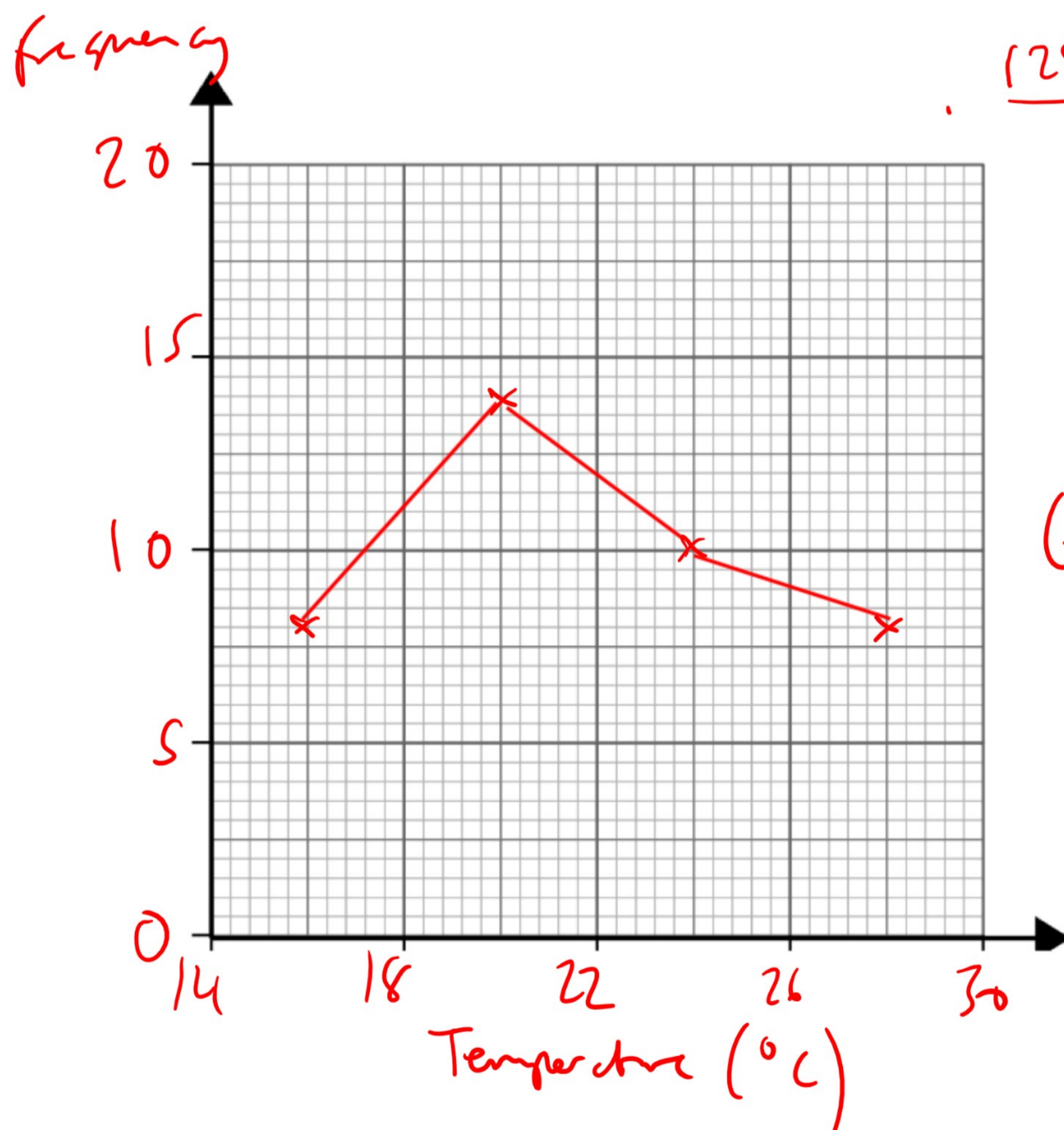
Answer:  $\frac{17}{24}$   
(1 mark)



Q8. Over a period of time, the maximum temperature during a day is recorded. A frequency polygon for the following incomplete data set is to be drawn.

Max Temperature ( $^{\circ}\text{C}$ )	Frequency	mid-point $\times$ frequency
$14 \leq w < 18$	8	$16 \times 8 = 128$
$18 \leq w < 22$	14	$20 \times 14 = 280$
$22 \leq w < 26$	10	$24 \times 10 = 240$
$26 \leq w < 30$	$x$	$28 \times x = 28x$

Given that the mean is 21.8, work out the missing frequency value and plot the frequency chart on the graph below:



$$\frac{128 + 280 + 240 + 28x}{8 + 14 + 10 + x} = 21.8$$

$$8 + 14 + 10 + x$$

$$648 + 28x = 21.8$$

$$32 + x$$

$$648 + 28x = 697.6 + 21.8x$$

$$6.2x = 49.6$$

$$x = 8$$

Answer: \_\_\_\_\_

(5 marks)