

Name

ANSWERS

Class



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# Frequency polygons

(9 – 1) Topic booklet

## Foundation

These questions have been collated from previous years GCSE Mathematics papers.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a 1F question you are not allowed to use a calculator.
- If the question is a 2F or a 3F question, you may use a calculator to help you answer.

### Information

- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**Answer ALL questions**  
**Write your answers in the space provided.**  
**You must write down all the stages in your working.**

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



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

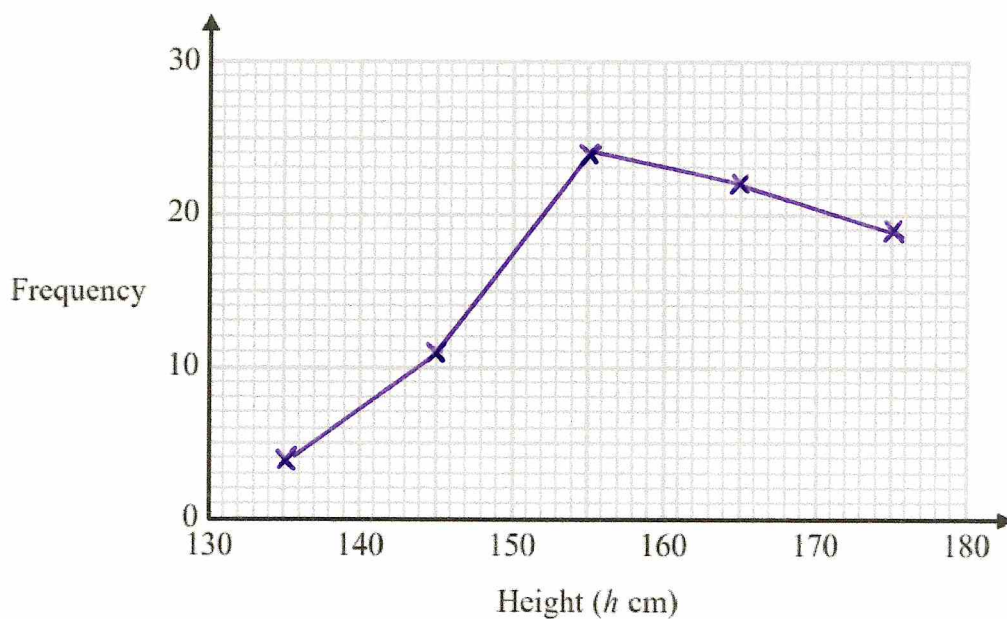
(a) Find the class interval that contains the median.

80

$160 < h \leq 170$

(1)

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

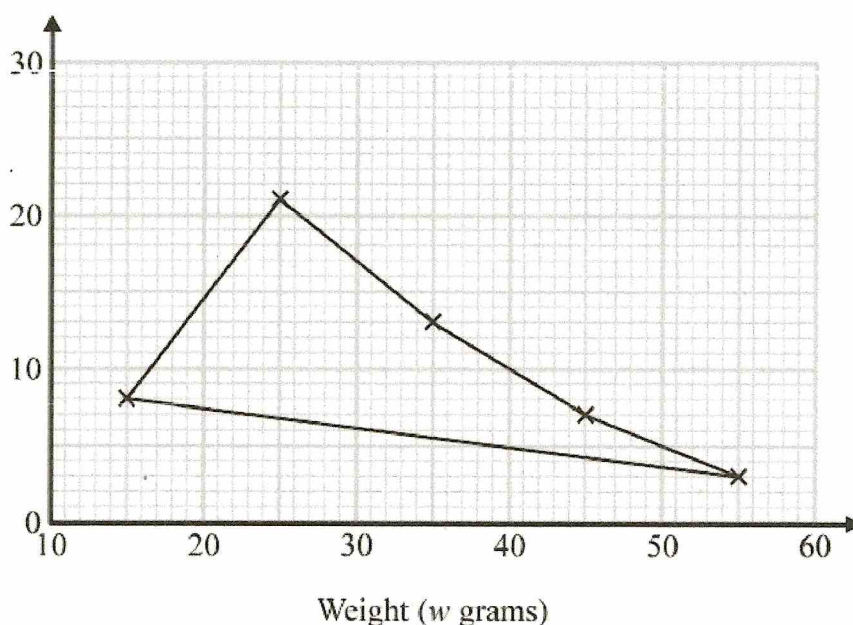


(2)

21 The table shows some information about the weights of 50 potatoes.

Weight ( $w$ grams)	Frequency
$10 < w \leq 20$	6
$20 < w \leq 30$	21
$30 < w \leq 40$	13
$40 < w \leq 50$	7
$50 < w \leq 60$	3

Iveta drew this frequency polygon for the information in the table.  
The frequency polygon is **not** fully correct.



Write down **two** things that are wrong with the frequency polygon.

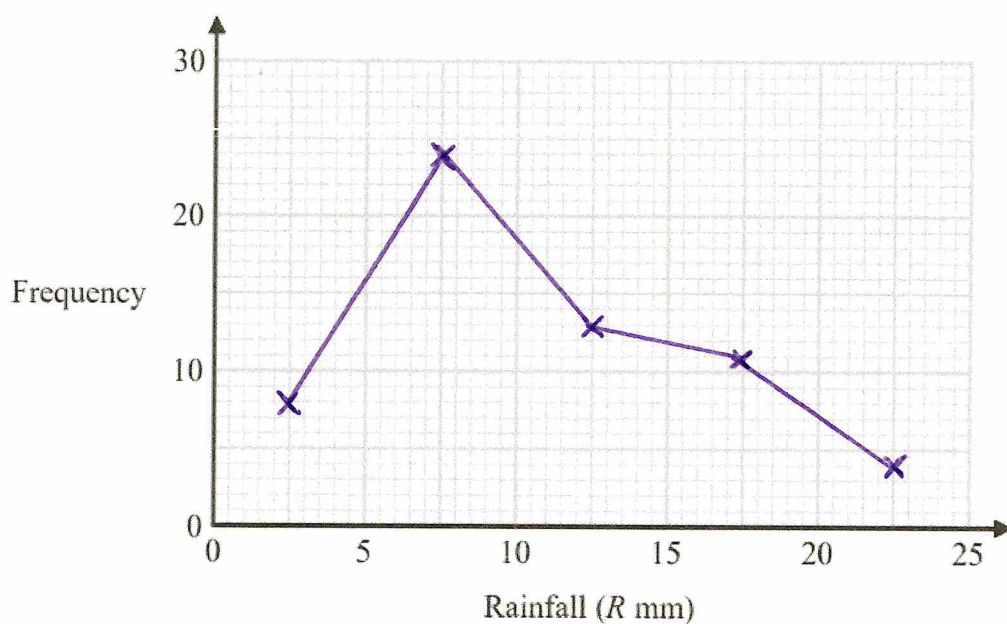
1.  $10 < w \leq 20$  has been plotted at 8 and not 6.
2. There should not be a line between the first and last points



23 The table shows information about the daily rainfall in a town for 60 days.

Rainfall ( $R$ mm)	Frequency
$0 \leq R < 5$	8
$5 \leq R < 10$	24
$10 \leq R < 15$	13
$15 \leq R < 20$	11
$20 \leq R < 25$	4

Draw a frequency polygon for this information.



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

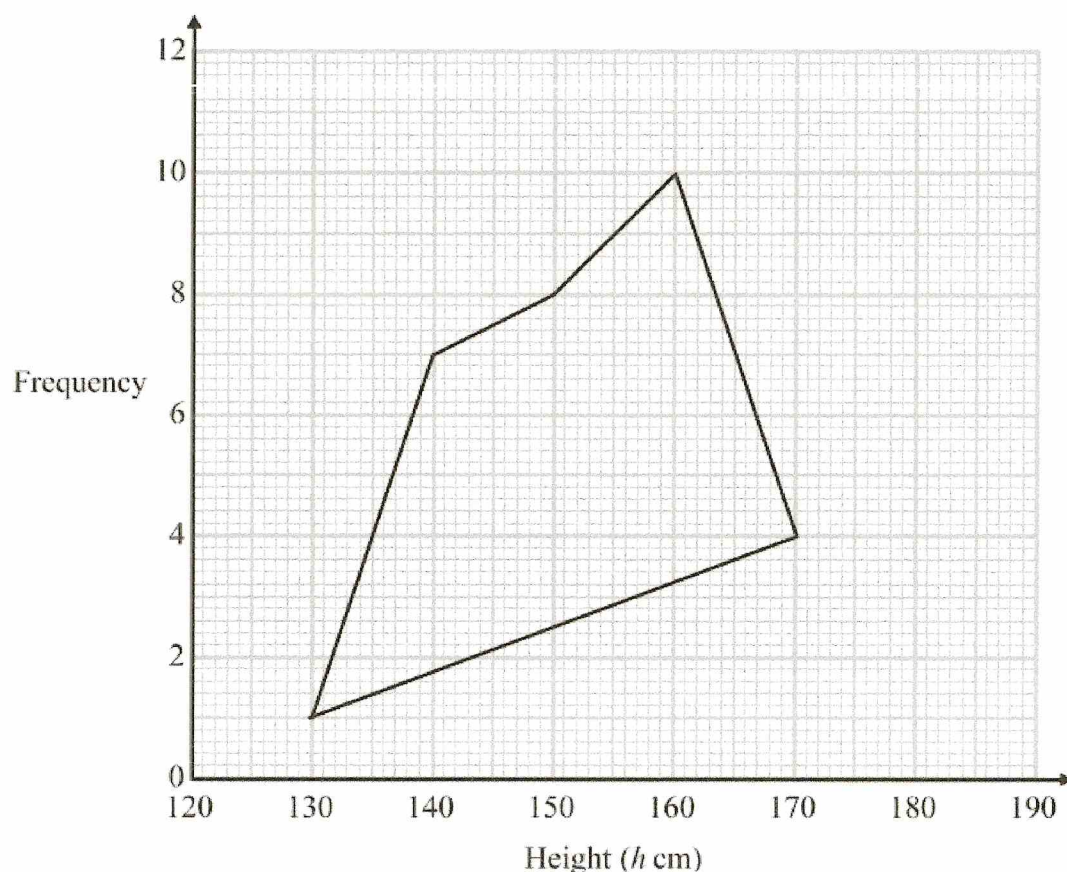
Height ( $h$ cm)	Frequency
$130 < h \leq 140$	1
$140 < h \leq 150$	7
$150 < h \leq 160$	8
$160 < h \leq 170$	10
$170 < h \leq 180$	4

(a) Write down the modal class interval.

$160 < h \leq 170$

(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 The points have been plotted using the lower bound.
- 2 There shouldn't be a line between the first and last

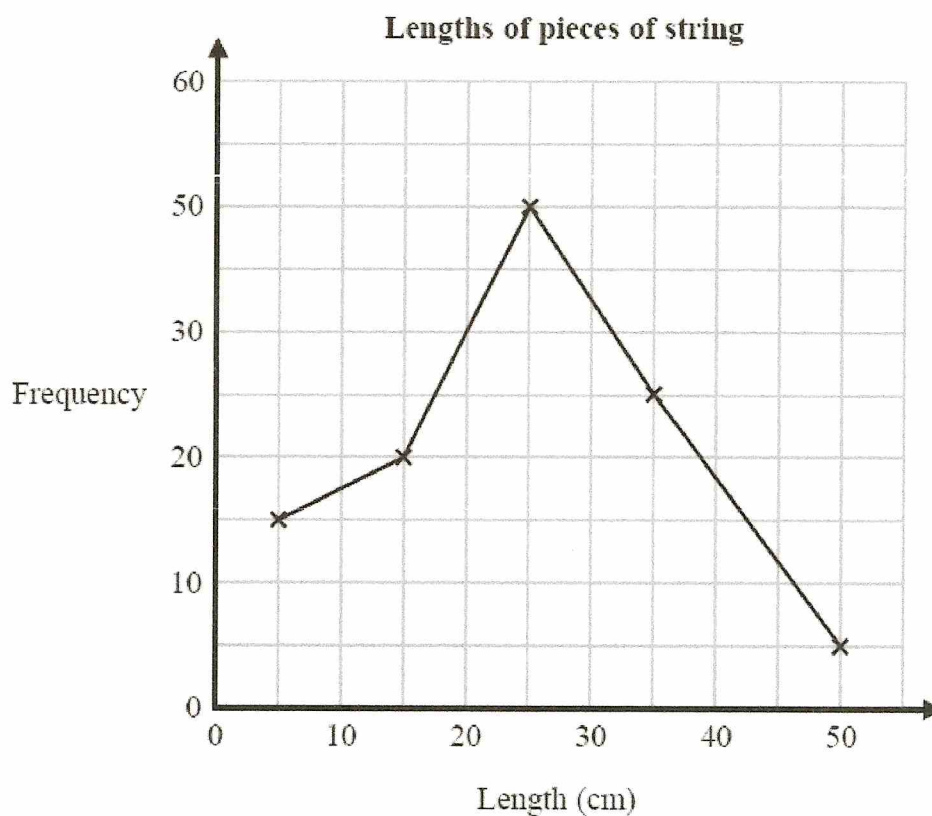
(2)

26 The table gives information about the lengths, in cm, of some pieces of string.



Length ( $t$ cm)	Frequency
$0 < t \leq 10$	15
$10 < t \leq 20$	20
$20 < t \leq 30$	50
$30 < t \leq 40$	25
$40 < t \leq 50$	5

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



Write down **two** mistakes that Amos has made.

1. The last point should be at 45 not 50

2. 40 is missing from the vertical axis



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



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

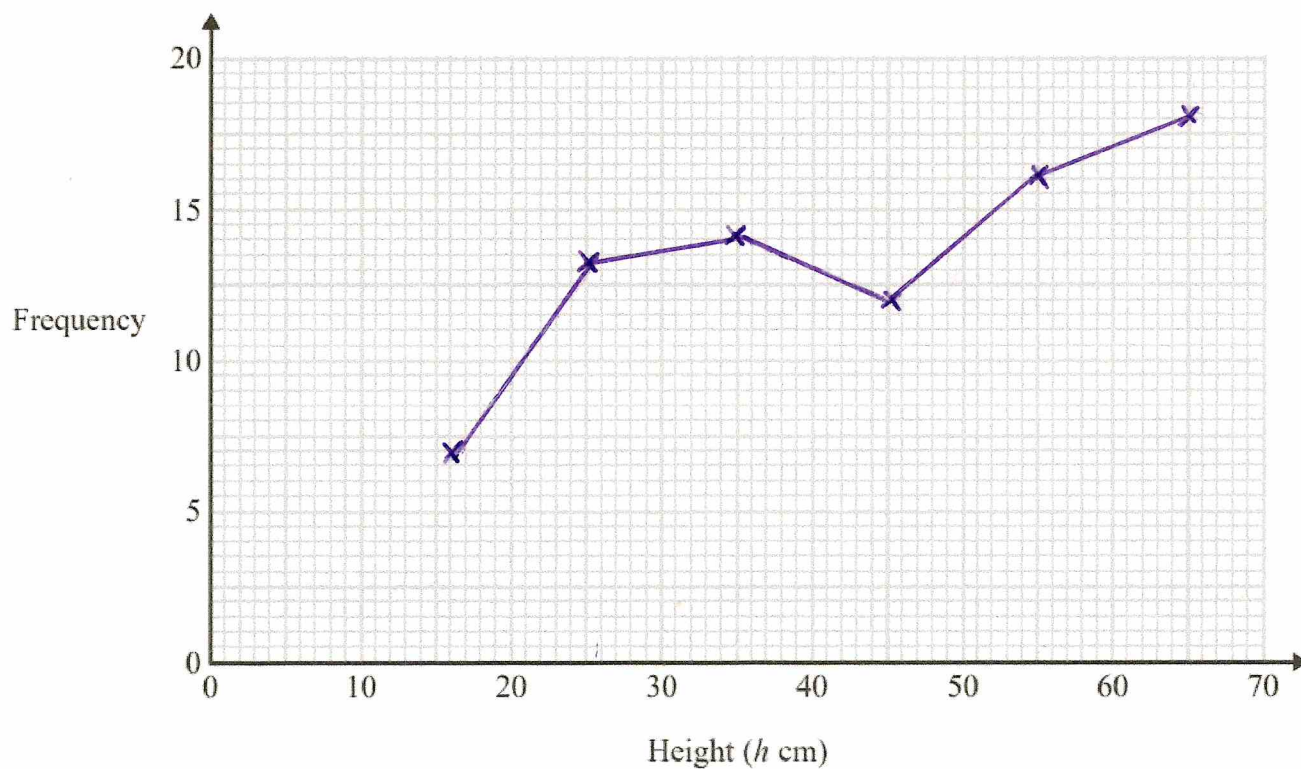
(a) Find the class interval that contains the median.

80

$40 < h \leq 50$

(1)

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



(2)