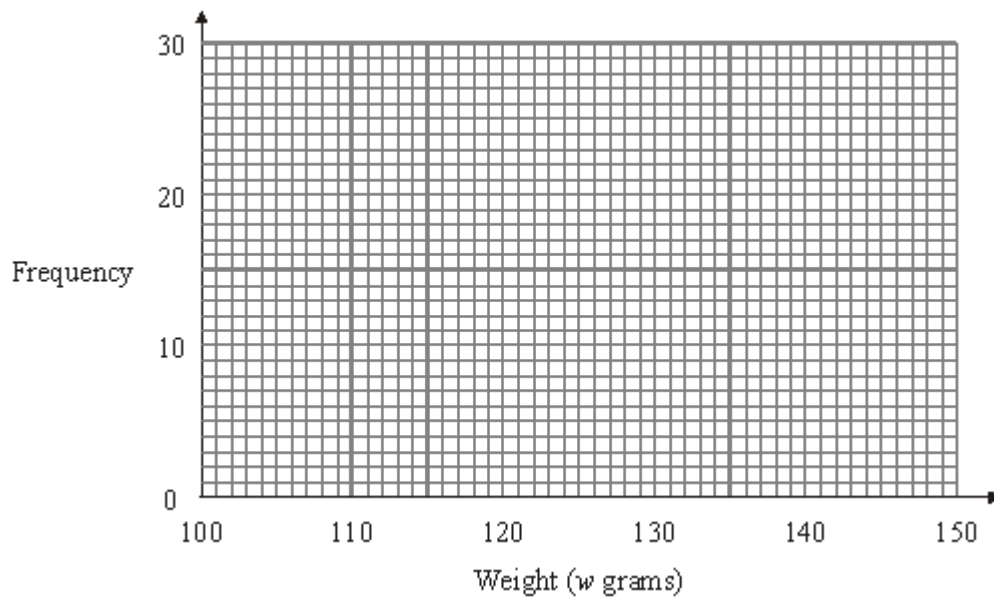


**Q1.** The table shows some information about the weights ( $w$  grams) of 60 apples.

Weight ( $w$ grams)	Frequency
$100 \leq w < 110$	5
$110 \leq w < 120$	9
$120 \leq w < 130$	14
$130 \leq w < 140$	24
$140 \leq w < 150$	8

Draw a frequency polygon to show this information.



(Total 2 marks)

**Q2.** The table shows some information about the ages, in years, of 80 people.

Age ( $a$ years)	Frequency
$20 \leq a < 30$	19

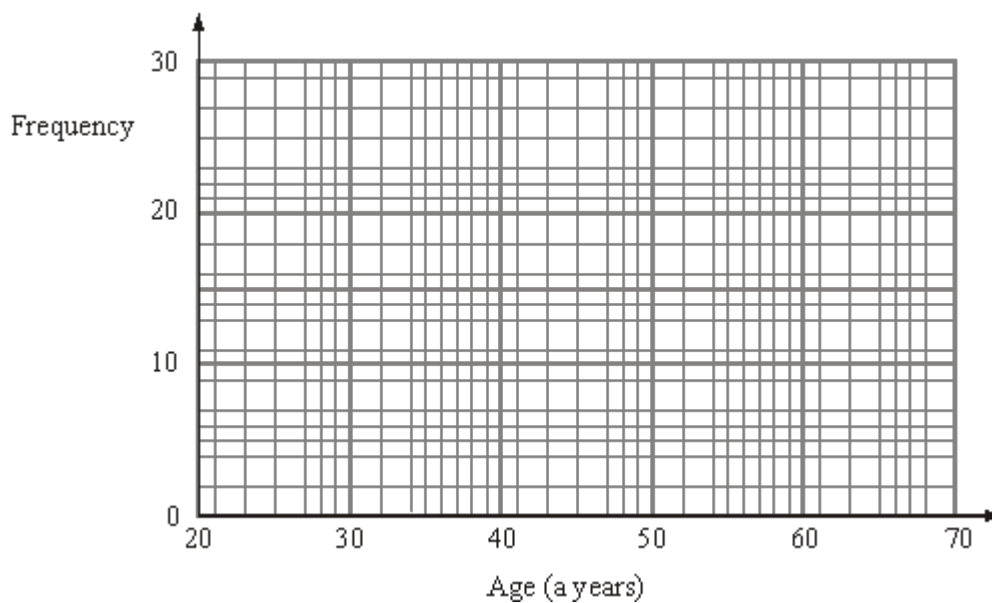
$30 \leq a < 40$	22
$40 \leq a < 50$	24
$50 \leq a < 60$	10
$60 \leq a < 70$	5

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

.....

(1)

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



(2)

(Total 3 marks)

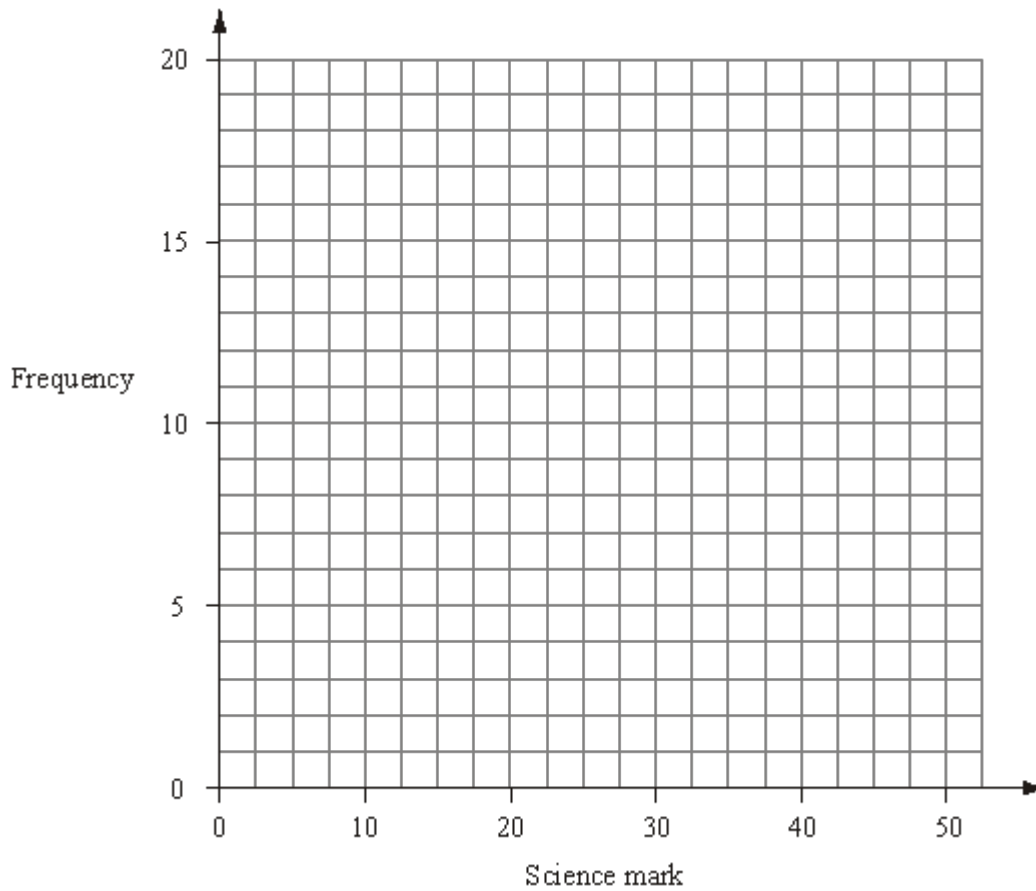
**Q3.** 60 students take a science test.  
The test is marked out of 50.

This table shows information about the students' marks.

<b>Science mark</b>	0–10	11–20	21–30	31–40	41–50
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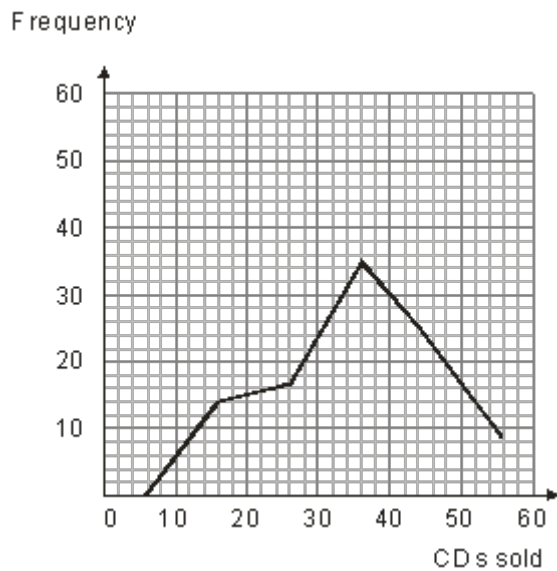
Frequency	4	13	17	19	7
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On the grid, draw a frequency polygon to show this information.



(Total 2 marks)

- Q4.** Kevin and Joe each manage a shop that sells CDs. Kevin's shop is in the High Street and Joe's is in the Retail Park. They want to compare the sales of CDs in each of their shops for the first 100 days of the year.



Kevin's information about the number of CDs sold each day in the High Street shop is shown on the grid. Each class interval is 10 CDs wide.

Joe's information about the number of CDs sold each day in the Retail Park shop is shown in the table.

Number of CDs sold each day	Frequency
0 – 10	10
11 – 20	34
21 – 30	24
31 – 40	13
41 – 50	7
51 – 60	12

Compare the sales of CDs in the two shops.

**(Total 4 marks)**

M1.

Answer	Mark	Additional Guidance
Points plotted at (105,5), (115,9), (125,14), (135,24), (145,8) and joined with line segments	2	<b>B2</b> cao for plotting correct points $\pm 1$ sq and joining with line segments <b>(B1</b> for points plotted correctly at midpoints of intervals or joining points with line segments at the correct heights and consistent within the class interval (including end values) or correct frequency polygon with one point incorrect) or correct frequency polygon with first and last point joined  NB Ignore any histogram drawn and any part of frequency polygon outside range of first and last points plotted
<b>Total for Question: 2 marks</b>		

M2.

	Working	Answer	Mark	Additional Guidance
(a)		$30 \leq a < 40$	1	<b>B1</b> cao
(b)		Points plotted at (25, 16), (35, 20), (45, 23), (55, 9), (65, 2) and joined with line segments	2	<b>B2</b> complete polygon (ignore histograms and any lines below an age of 25 or above an age of 65), but award B1 only if there is a line joining the first to the last point  (B1 one vertical or horizontal plotting error or incorrect but consistent error in placing the midpoints horizontally or correct plotting but not joined)  Plotting tolerance: 1 (2 mm) square; points to be joined by lines (ruled or hand drawn, but not curves)

<b>Total for Question: 3 marks</b>
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**M3.**

Answer	Mark	Additional Guidance
Polygon	2	<b>B2</b> Complete polygon (ignore histograms and any lines below a mark of 5 or above a mark of 45), but award <b>B1</b> if there is a line joining the first to the last point. <b>(B1</b> One vertical or horizontal plotting error <b>OR</b> incorrect but consistent error in placing the midpoints horizontally <b>OR</b> correct plotting but not joined). Plotting tolerance :1/2 square; points to be joined by lines (ruled or hand drawn, but not curves).
<b>Total for Question: 2 marks</b>		

**M4.**

	Working	Answer	Mark	Additional Guidance
<b>QWC</b> <b>i, iii</b>	Makes a comparison of the shape of the distribution by drawing	Correct comparisons	4	<b>B1, B1, B1</b> for any 4 of the following done correctly  Plots frequency polygon or produces table compares modes compares medians compares total sales  <b>C1</b> for comments on shape of the distributions
<b>FE</b>	Makes a comparison of the modal classes(31—40, 11—20)  Makes a comparison of the class intervals that contain the medians.(31—40, 21—30)			

Works out an estimate of the total sales of each shop(2635, 3530)		<b>QWC: Decisions should be stated, and all comments should be clear and follow through from any working or diagrams</b>
<b>Total for Question: 4 marks</b>		

**E1.** Around half the candidates failed to score any marks on this question, generally for plotting the points not at the mid-intervals and then failing to join their points with straight lines. Around 30% scored one mark either for not joining their correct points with straight lines or joining them correctly but having the points at one of the boundaries of the given class intervals. Some plotted the points and then drew a line of best fit, clearly not knowing what a frequency polygon was.

**E3. Foundation**

There were many errors in this question, resulting in few candidates gaining full marks. Errors included plotting points at the end values of the class interval, rather than the midpoint, plotting points and not joining them, or attempts to join them with a curve. Many also joined the first to the last point with a straight line, which was inappropriate for a frequency polygon. It was clear some candidates were totally unfamiliar with frequency polygons.

**Higher**

Frequency polygons have made a comeback after a few years' absence. This might go some way to explain the indifferent response. Many candidates plotted the points at the upper end of the interval rather than the middle. There were many cases of inconsistent plotting where not enough care had been taken in the positioning of the points. Commonly, candidates joined the first point directly to the last point to produce a pentagon.

A successful teaching approach adopted by many centres is to draw essentially a histogram based on the (almost) equal class intervals and mark then join the midpoints of the top of the bars.