Frequency polygons

Grade 4 | Foundation and Higher | 5 questions, 20 marks

GCSE Statistics topic practice

Name: _____ **Date:** _____ **Score:** _____ **/ 20**

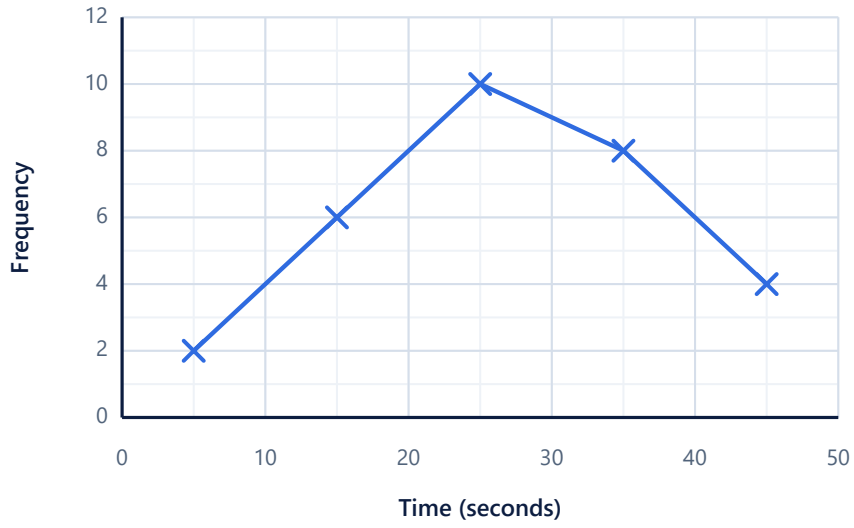
1 30 students each solved a puzzle. The frequency polygon shows information about the times, t seconds, they took.

The classes are $0 < t \leq 10$, $10 < t \leq 20$ and so on. Each point is plotted at the midpoint of its class.

a. Write down the modal class. (1)

b. How many students took 20 seconds or less? (1)

c. Work out the fraction of the students who took more than 30 seconds. (1)



(3 marks)

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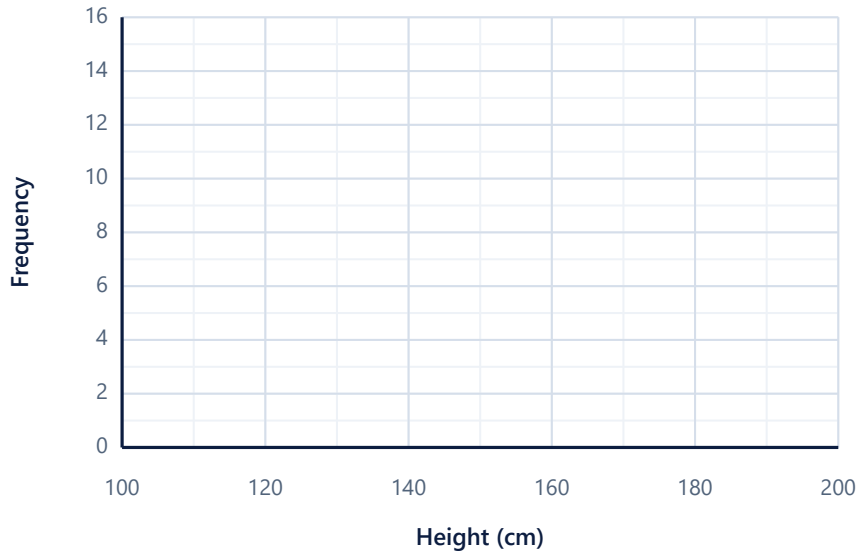
2 A gardener measures the height, h cm, of each of 40 sunflowers.

Height, h (cm)	Frequency
$100 < h \leq 120$	4
$120 < h \leq 140$	9
$140 < h \leq 160$	15
$160 < h \leq 180$	8
$180 < h \leq 200$	4

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

b. Write down the modal class. (1)

c. Work out the percentage of the sunflowers that are more than 160 cm tall. (1)



(4 marks)

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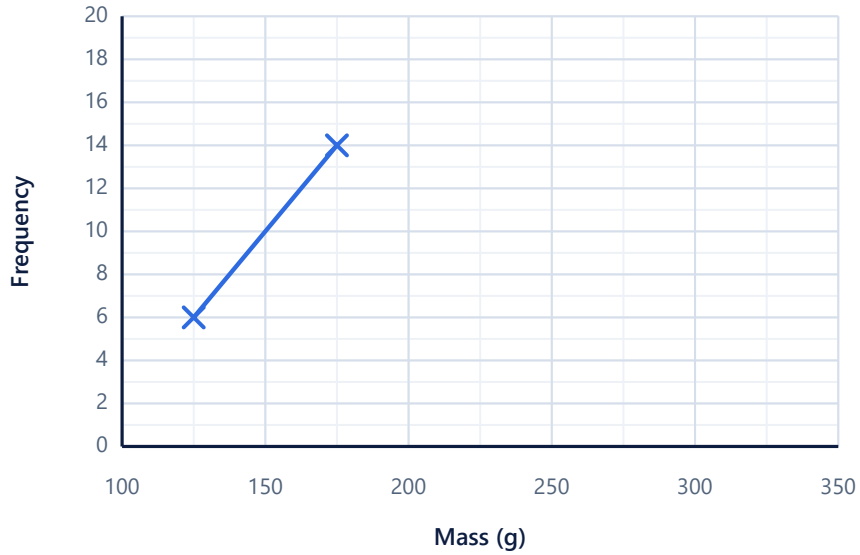
3 A farmer weighs 50 potatoes. The table shows information about the mass, m grams, of each potato.

Mass, m (g)	Frequency
$100 < m \leq 150$	6
$150 < m \leq 200$	14
$200 < m \leq 250$	18
$250 < m \leq 300$	9
$300 < m \leq 350$	3

The first two points of the frequency polygon have been plotted and joined.

a. Complete the frequency polygon. (2)

b. Work out the percentage of the potatoes that have a mass of 250 g or less. (2)



(4 marks)

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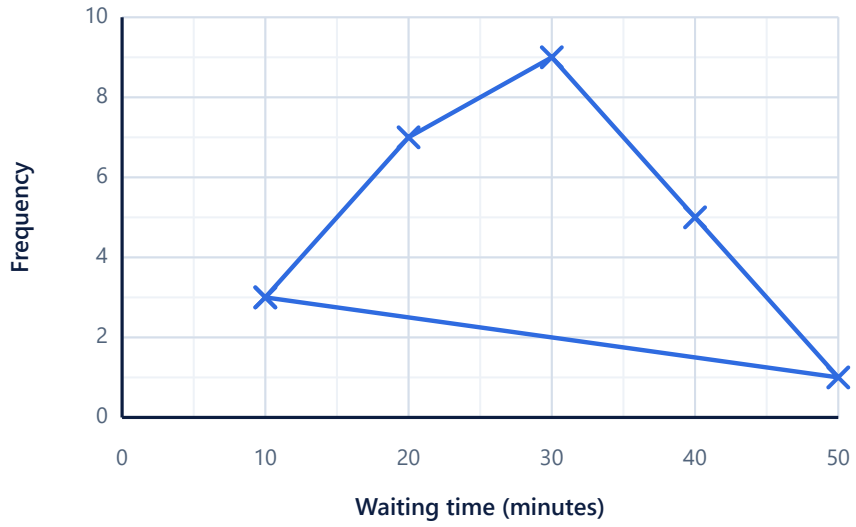
4 A receptionist records the waiting time, t minutes, of 25 patients at a doctor's surgery.

Waiting time, t (minutes)	Frequency
$0 < t \leq 10$	3
$10 < t \leq 20$	7
$20 < t \leq 30$	9
$30 < t \leq 40$	5
$40 < t \leq 50$	1

Mia draws this frequency polygon for the data.

a. Write down two mistakes that Mia has made. (2)

b. On the same grid, draw the correct frequency polygon. (2)



(4 marks)

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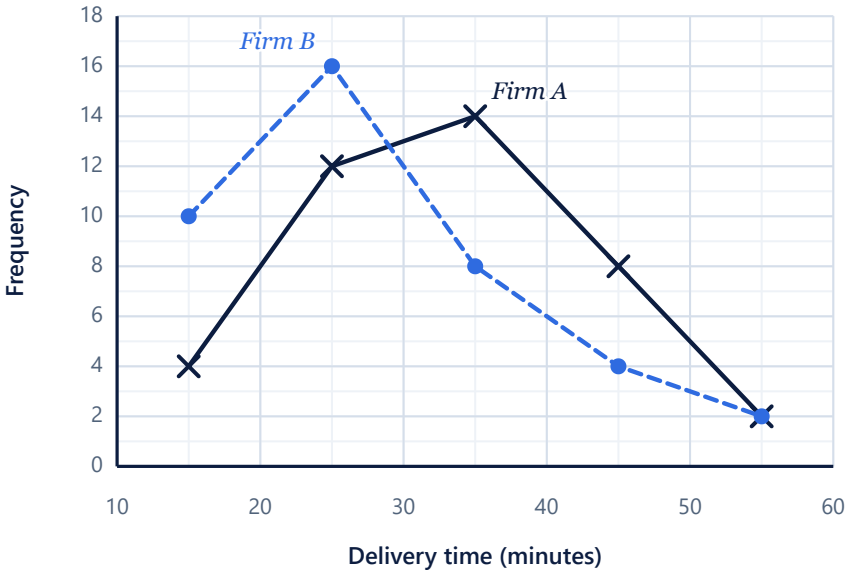
5 Two takeaway firms each recorded the delivery time, t minutes, of 40 orders. The frequency polygons show the results. Firm A is the solid line and Firm B is the dashed line.

The classes are $10 < t \leq 20$, $20 < t \leq 30$ and so on.

a. Write down the modal class for Firm A. (1)

b. Work out how many more of Firm A's orders than Firm B's orders took more than 30 minutes. (2)

c. Which firm generally delivers more quickly? Give a reason for your answer. (2)



(5 marks)

End of questions | Total 20 marks

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