GCSE Grade 5

Maths Booklet 3

Paper 1H
Non-Calculator

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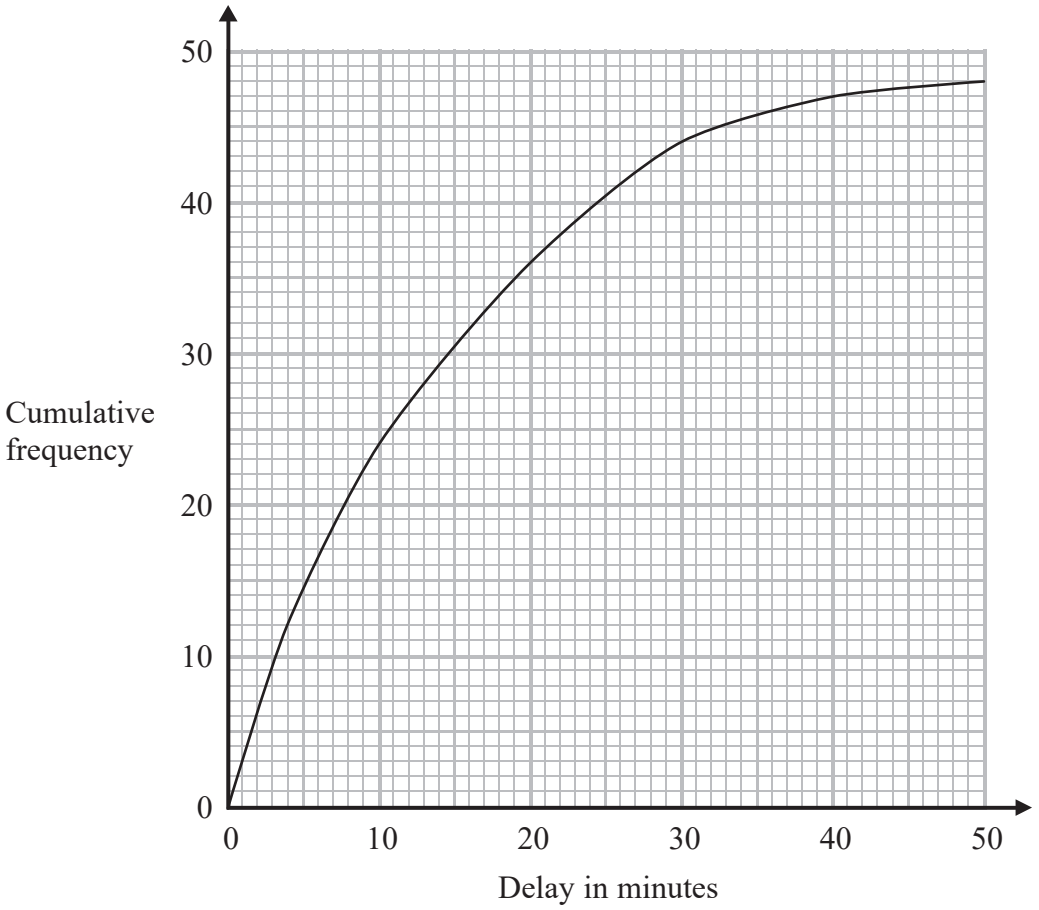
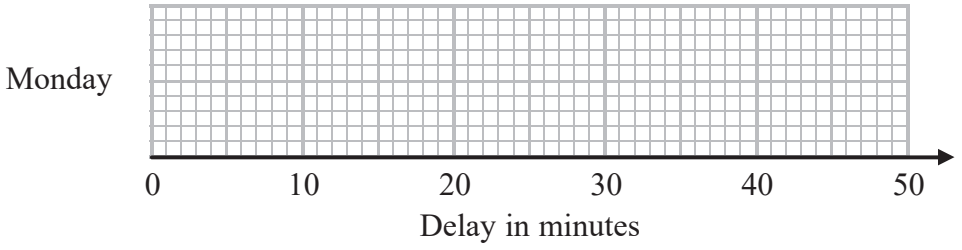
1 The times that 48 trains left a station on Monday were recorded.

The cumulative frequency graph gives information about the numbers of minutes the trains were delayed, correct to the nearest minute.



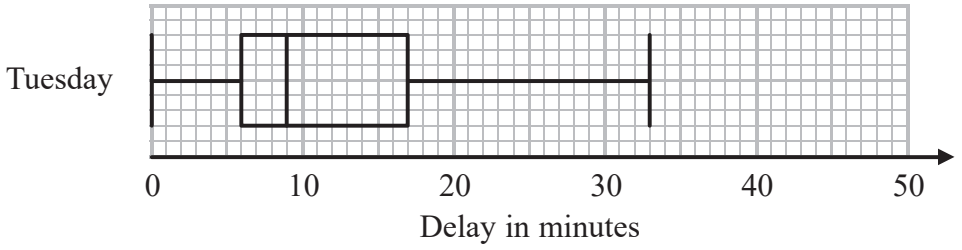
The shortest delay was 0 minutes.
The longest delay was 42 minutes.

(a) On the grid below, draw a box plot for the information about the delays on Monday.



(3)

48 trains left the station on Tuesday.
The box plot below gives information about the delays on Tuesday.



(b) Compare the distribution of the delays on Monday with the distribution of the delays on Tuesday.

.....

.....

.....

.....

(2)

Mary says,

"The longest delay on Tuesday was 33 minutes.
This means that there must be some delays of between 25 minutes and 30 minutes."

(c) Is Mary right?
You must give a reason for your answer.

.....

.....

(1)

(Total for Question 1 is 6 marks)

2 (a) Simplify $\dfrac{x-1}{5(x-1)^2}$

.....

(1)

(b) Factorise fully $50 - 2y^2$

.....

(2)

(Total for Question 2 is 3 marks)

3 The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings (£x)	Frequency
$150 < x \leqslant 250$	1
$250 < x \leqslant 350$	11
$350 < x \leqslant 450$	5
$450 < x \leqslant 550$	0
$550 < x \leqslant 650$	3

(a) Work out an estimate for the mean of the weekly earnings.

£.....

(3)

Nadiya says,

"The mean may **not** be the best average to use to represent this information."

(b) Do you agree with Nadiya?
You must justify your answer.

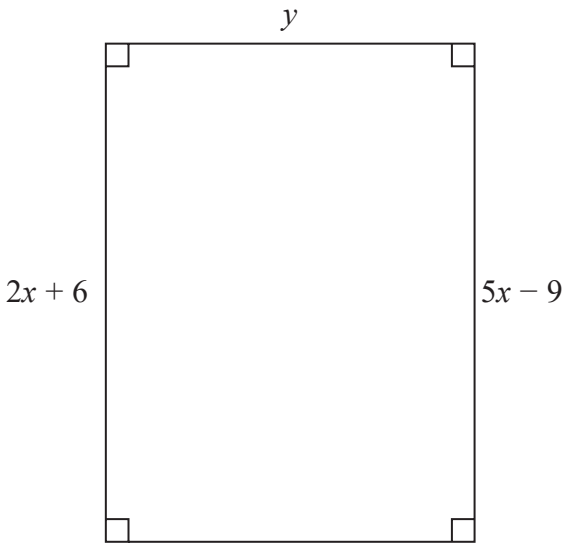
.....

.....

(1)

(Total for Question 3 is 4 marks)

4 Here is a rectangle.



All measurements are in centimetres.

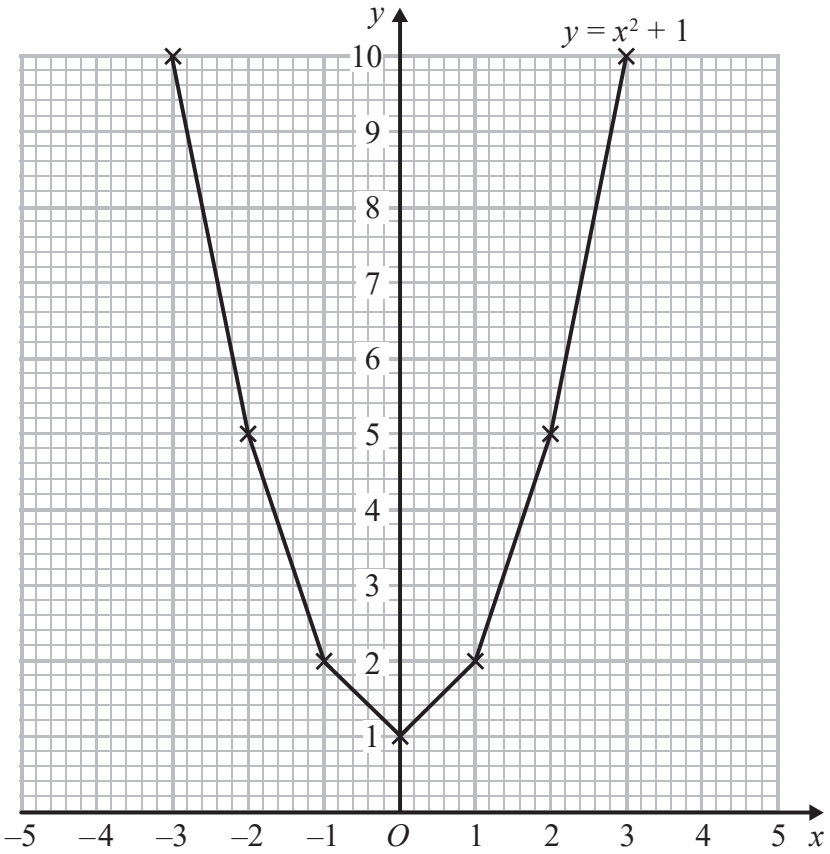
The area of the rectangle is 48 cm^2.

Show that $y = 3$

(Total for Question 4 is 4 marks)

5 Brogan needs to draw the graph of $y = x^2 + 1$

Here is her graph.



Write down one thing that is wrong with Brogan's graph.

.....

.....

(Total for Question 5 is 1 mark)

6 Write these numbers in order of size.
Start with the smallest number.

$0.2\dot{4}\dot{6}$ $0.24\dot{6}$ $0.\dot{2}4\dot{6}$ 0.246

.....

(Total for Question 6 is 2 marks)

7 James and Peter cycled along the same 50 km route.
James took $2\frac{1}{2}$ hours to cycle the 50 km.

Peter started to cycle 5 minutes after James started to cycle.
Peter caught up with James when they had both cycled 15 km.

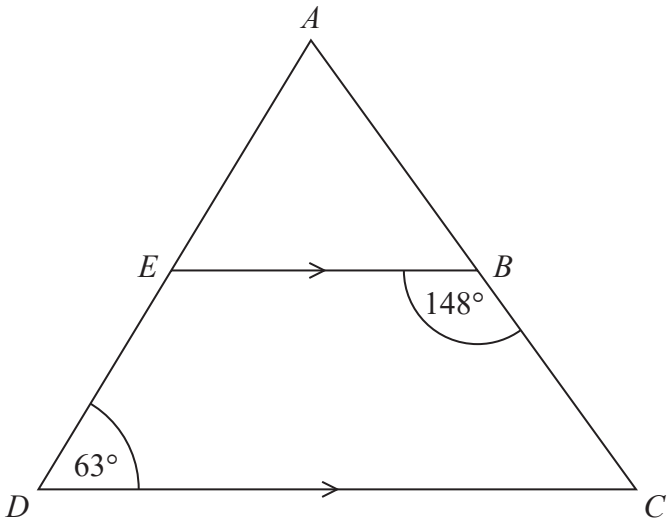
James and Peter both cycled at constant speeds.

Work out Peter's speed.

..... km/h

(Total for Question 7 is 5 marks)

8 *ADC* is a triangle.



AED and *ABC* are straight lines.
EB is parallel to *DC*.

Angle *EBC* = 148°
Angle *ADC* = 63°

Work out the size of angle *EAB*.
You must give a reason for each stage of your working.

(Total for Question 8 is 5 marks)