PRINT COPY BRAILLE

N5

National Qualifications

2025

Applications of Mathematics

Paper 1 (Non-calculator)

Friday, 16 May

Instructions to Candidates

Candidates should enter their surname, forename(s), date of birth, Scottish candidate number and the name and level of the subject at the top of their first answer sheet.

Total marks – 35

Attempt ALL questions.

You must NOT use a calculator.

To earn full marks you must show your working in your answers.

State the units for your answer where appropriate.

You must clearly identify the question number you are attempting on your answer sheet.

Write your answers clearly on your answer sheet.

Questions marked with an asterisk differ in some respects from those in the printed paper.

Marks are shown in square brackets at the end of each question or part question.

An ow in the margin indicates a new question.

[Braille page 2] Tactile diagrams are produced in a separately bound booklet.

A separate formula sheet is provided.

[Braille page 3] Total marks — 35

Attempt ALL questions

ow 1. At a school, pupils voted to elect a head prefect.

• Fraser received 3/8 of the votes.

• Gracie received 1/5 of the votes.

• Alison received the rest of the votes.

Calculate the fraction of the votes that Alison received. [3 marks]

ow * 2. Laura is buying a picture.

She looks on 3 websites to find the best deal.

[In the table below, Website is followed by: price of picture; offer; Postage cost.]

A: £21.50; 0; £3.49.

B: £35; 30% off all pictures; Free.

C: £30; 1/4 off all pictures; £2.80.

Determine the website which offers the best deal to buy the picture and get it posted to Laura. Use your working to justify your answer. [3 marks]

[Braille page 4] ow ∴ 3. Refer to the diagram for Question 3(a). A company produced the following table to show all the 9 tasks involved in manufacturing and packaging chocolate eggs.

[In the table below, Activity is followed by: Description; Preceding activity; Time (seconds).]

A: Melt chocolate and stir ingredients; H; 600.

B: Wrap the egg; C, I; 30.

C: Cool the chocolate; D; 1800.

D: Pour chocolate into egg mould; A; 105.

E: Construct the cardboard box; G; 60.

F: Place wrapped egg into box; B, E; 45.

G: Print cardboard; H; 240.

H: Collect materials and ingredients; none; 120.

I: Print foil; H; 180.

(a) Write the tasks which need to be done AND the time taken for each task labelled (ii) to (ix). [2 marks]

[Braille page 5] Activity (i) has been done for you.

(i) H 120

(b) Calculate the minimum time taken to manufacture and package a chocolate egg. [1 mark]

ow ∴ 4. Harris recorded the time, in minutes, that it took him to drive to work over eight days.

22 21 37 25 32 28 36 24

(a) For this data, calculate the lowest drive time plus the highest drive time. [2 marks]

(b) Describe all the elements of the box plot. [2 marks]

(c) Calculate the interquartile range for the number of minutes it took Harris to drive to work. [1 mark]

His colleague Lewis also recorded the number of minutes it took him to drive to work over eight days.

The interquartile range for the number of minutes that Lewis took is 9 minutes.

(d) Make one valid comment comparing the number of minutes Harris and Lewis took to drive to work. [1 mark]

Refer to the diagram for Question 4. Harris noticed that his journey times were affected by the time he departed. The **[Braille page 6]** scattergraph shows his departure times and the journey times in minutes.

(e) (i) Determine the time of departure that resulted in a 15 minute journey. [1 mark]

(ii) Determine the journey time when Harris departed at 7:50am. [1 mark]

(f) Tomorrow, Harris plans to depart at 7:55 am. Use the line of best fit to estimate the time Harris will arrive at work. [2 marks]

ow 5. Julie scored 78% in her science test.

She also scored 32 out of 40 in her maths test.

Determine which subject she performed better in.

Justify your answer. [2 marks]

ow 6. Ramani works as a sales person for a car company.

She is paid a basic monthly salary of £1870 plus commission of 3% on her monthly sales OVER £58,000.

In April, her sales totalled £96,000.

Calculate Ramani's gross pay in April. [2 marks]

[Braille page 7] ow 7. Refer to the diagram for question 7. A school is designing a playpark.

It is in the shape of a rectangle and a semi-circle.

(a) Calculate the area of the playpark. [2 marks]

Take **π** = 3.14

The school plans to cover some of the playpark with bark.

• They plan to cover 81 m^2 with bark.

• 1 bag of bark covers 5 m^2.

• 1 bag of bark costs £8.

(b) Calculate the cost of the bark. [2 marks]

ow 8. Refer to the diagram for Question 8. Lesley ran a game stall at her local gala.

The game requires two spinners to be spun and allowed to come to rest.

The spinners are fair and are shown below.

To win a prize, spinner B must land on A LARGER NUMBER than spinner A.

(a) Calculate the probability of winning a prize. [3 marks]

Catriona runs a DIFFERENT game at the gala.

Players who win receive a £5 prize.

When playing this game, the probability of a player winning a prize is 0.15.

The game was played 80 times.

Catriona gave out a total of £70 in prizes.

(b) Determine if this is more or less than expected. [3 marks]

ow 9. A farm has 3 different types of animal.

It has sheep, pigs and cows in the ratio 9:7:4 respectively.

There are 180 MORE sheep than there are cows.

Calculate the total number of animals on the farm. [2 marks]

[END OF QUESTION PAPER]