Babington House School

Mathematics Senior Examination

November 2022

First name:	
Last name:	
Primary School:	

Babington House School
Mathematics Senior Scholarship Examination

Advice for candidates

This Paper is made up of 2 sections

<u>Section 1 – Arithmetic:</u>
The first section aims to test the arithmetic skills of the candidates.
There are 10 questions in this section, each worth 1 mark, however a correct answer with no method will score 0 marks.
Candidates should draw on their knowledge of their times tables, long multiplication and long division to help them answer this section.
Candidates are advised to spend no more than 10 minutes on this section.

<u>Section 2 – Reasoning:</u>
The second section aims to test the reasoning skills of the candidates.
Questions in this section are longer and may require multiple steps in order to answer.
There are 12 questions in this section, each worth 1 mark, 2 marks, or 3 marks depending on their length and structure.
Candidates should draw on their knowledge of interpretation and analysing a question as well as applying their skills of basic arithmetic.
Candidates are advised to spend 30 minutes on this section.

The total for this paper is 40 marks
The total time allowed is 40 minutes

You must not use a calculator to answer any questions in this test.

Section 1 - Arithmetic

Candidates should aim to spend **no more than 10 minutes** on this section

Answer each of these questions, showing all of your working in the spaces provided.

Each question is worth **1 mark**

Answers with no working will score 0 marks, even if they are correct

1.	$5384 + 467$

Answer:

2.	$53678 - 2989$

Answer:

3. $7.24 + 6.2$

Answer:

4. $9064 \div 8$

Answer:

5. $\dfrac{11}{12} + \dfrac{3}{5}$

Answer:

6. $2\frac{3}{4} - \frac{1}{3}$

Answer:

7. $40 - 8 \div 4$

Answer:

8. 4^3

Answer:

9. 569 × 36

Answer:

10. 70% of 300
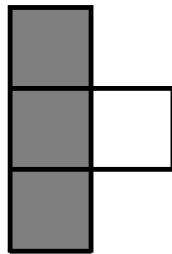
Answer:

End of Section 1

Section 2 - Reasoning

Candidates should aim to spend **30 minutes** on this section

Answer each of these questions, showing all of your working in the spaces provided.
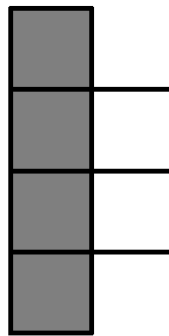
Each question is worth 1 mark, 2 marks or 3 marks
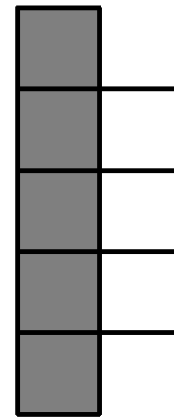
Question 1:
Here is a sequence of patterns made with grey tiles and white tiles.

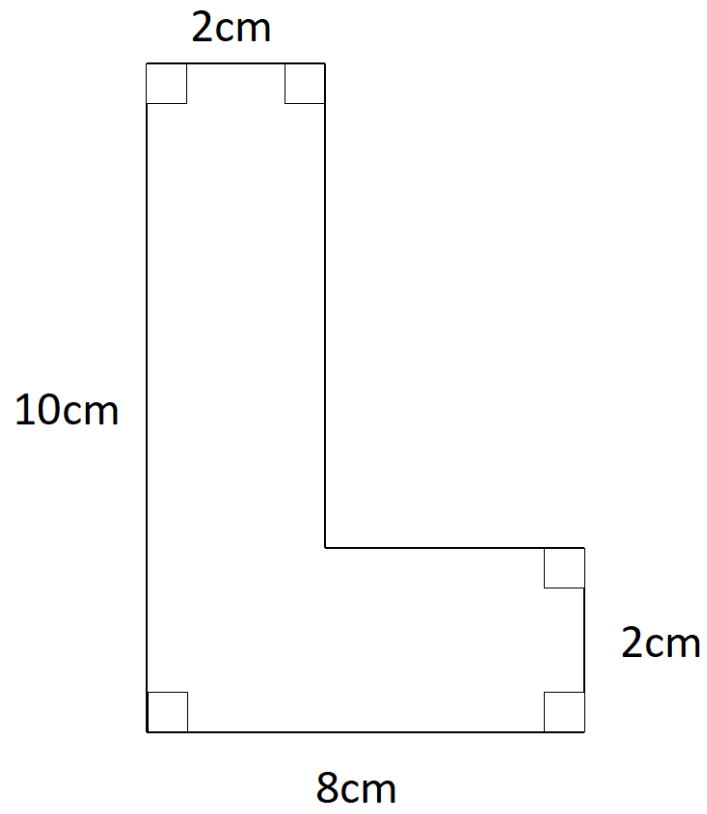Pattern number 1   Pattern number 2   Pattern number 3

a) In the space below, draw pattern number 4

(1)

b) Find the total number of tiles in pattern number 20

…………………………… **(2)**

Question 2:

2cm

10cm

2cm

8cm

Calculate the area of this shape.

.... cm^2
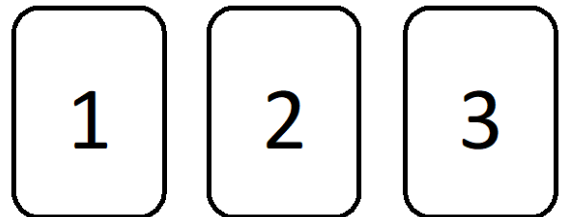
Question 3:

Here are some instructions for making a drink

> ***Add 100ml of juice
> to 2 litres of water***

Dev uses 5 litres of water to make the drink
How much drink has he made?

....

Question 4:

Sally has three tiles
Each tile has a different number on it
Sally puts all three tiles down to make a three
digit number

| 1 | 2 | 3 |

How many different numbers can Sally make?

....

Question 5:

There are 500 passengers on a train.

$\dfrac{7}{20}$ of the passengers are men.

40% of the passengers are women.

The rest of the passengers are children.

Work out the number of children on the train.

....
Total for question is 3 marks

Question 6:

8 identical pens cost £12

Work out the cost of 10 of these pens

£...............................

Question 7:

$$f = 6$$
$$g = 5$$

Work out the value of $3f - 2g$

....
Total for question is 2 marks

Question 8:
Write down three different multiples of 4 that add up to 40

....

Question 9:
Ryan and Carl each get paid a basic pay of £60 per day.
One day, Ryan also gets a bonus of 25% of his basic pay
On this same day, Carl gets £20 in tips from customers

Work out the difference between the total money that Ryan and Carl each get on this day.

....

Question 10:

Kate goes into a shop and buys 3 identical chocolate bars and a can of fizzy pop.

Max goes into the same shop and buys 5 of the same chocolate bars and the same can of fizzy pop.

Kate spends £2.70 in total and Max spends £4 in total

Work out the individual costs of the bar of chocolate and the can of fizzy pop

Chocolate Bar £……………………………

Fizzy Pop £……………………………

Question 11:
Carpet tiles are going to be used to cover a floor
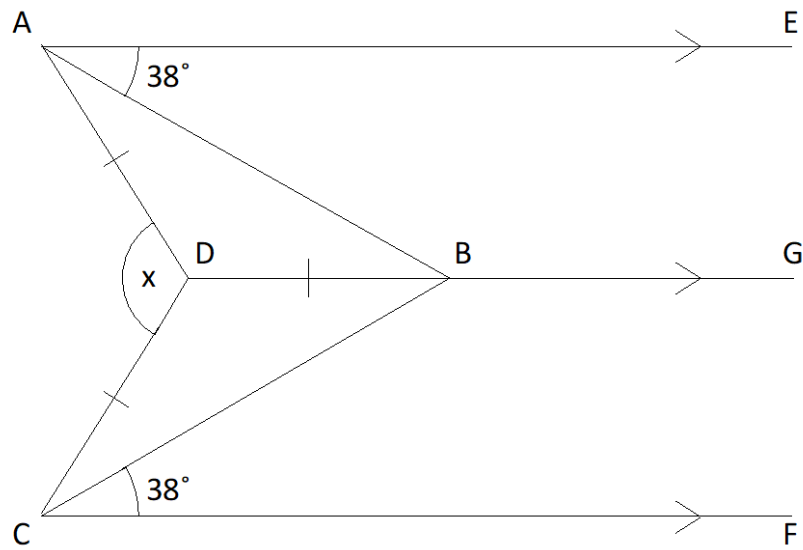The floor is a 1200mm by 1000mm rectangle
Each carpet tile is a 40cm by 30cm rectangle
Exactly 10 carpet tiles can be used to cover the floor completely

Show in a labelled sketch how this can be done.

....

Question 12:

AE, DBG and CF are parallel
DA = DB = DC
Angle EAB = angle BCF = 38°
Work out the size of the angle marked x
You must show your working

.............................°
Total for question is 3 marks

End of Section 2