BEYOND MATHS

PRIMARY SCHOOL CHALLENGE 2025

LEVEL 1 CHALLENGE
GRADE 4 AND 5 ROUND TWO

INSTRUCTIONS

1. The time allocated for this paper is $1\frac{1}{2}$ hours. All participants must remain for the full allocated time. Under no circumstances may extra time be given.

2. **This paper consists of 15 Questions over 3 Sections**.

Section A consists of 5 multiple choice questions. Each question is worth 1 mark.
Circle the letter you have chosen as your answer in pen. Should you wish to change an answer, put a cross over the letter and then circle your new chosen letter.

Section B consists of 5 questions where only an answer must be given. Each question is worth 2 marks. Write only your answer in the allocated space.

Section C consists of 5 questions where full working must be shown in the space provided. These questions are each worth 4 marks, and part marks may be awarded in this section only. Your final answer must be written in the allocated space.

3. Negative marking will not be applied.

4. Calculators (and other calculating devices) and geometry instruments are not allowed.

5. Figures are not necessarily drawn to scale.

6. Answer all questions on the answer sheet provided.

7. Paper may be used for rough working.

SECTION A

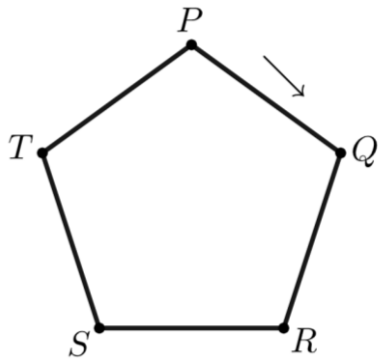
1. It is the year 2025, and the number 2025 is exactly divisible by 3.

   Which is the next year after 2025 which will be exactly divisible by 3?

A. 2030 B. 2027 C. 2029 D. 2028 E. 2026

2. A regular pentagon $PQRST$ is shown in the figure below. Each side is 6cm in length. An ant is sitting at point P.
   The ant begins crawling around the pentagon in a clockwise direction. The ant moves 1cm every one second.

   Which side will the ant be on after 45 seconds?



A. PQ B. QR C. RS D. ST E. TP

3. 45 pens are handed out to 8 pupils. Each pupil receives a <u>different</u> number of pens, and all pupils receive at least one pen.

   What is the <u>largest</u> number of pens a pupil could receive?

A. 19 B. 12 C. 17 D. 14 E. 13

4. Friends Amy, Beth, and Cath meet at a coffee shop.

- Amy and Beth each order a cup of coffee
- Beth and Cath each order a muffin
- A cup of coffee costs R20 and a muffin costs R30
- Each paid only for what they ordered

What fraction of the <u>total cost</u> did Beth pay?

A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{2}{5}$ D. $\frac{2}{3}$ E. $\frac{3}{4}$

5. In the sum below, each letter represents a <u>different</u> digit from $0 - 9$.

$$\begin{array}{r} A\ B\ A \\ +\ \ B\ C \\ \hline B\ A\ A \end{array}$$

What is the value of $A + B + C$?

A. 21 B. 17 C. 12 D. 15 E. 10

SECTION B

NB: Write <u>only</u> your final answer in the allocated space.

6. A six-sided dice is thrown and keeps landing with exactly the <u>same</u> number on the top face. This repeating number is added in a sum each time the dice is thrown. The sum finally reaches 45.

How many different numbers (1 – 6) on the dice could have landed on top each time?

7. The average weight of <u>three</u> children is 13kg. Eliza and Ava join the three children. The average weight of <u>all five of them</u> is 15kg.

   What is the average weight of Eliza and Ava in kg (kilograms)?

   (As an example of the word Average: If two children weigh 20kg and 24kg, then their average weight is $(20 + 24) \div 2 = 22$kg)

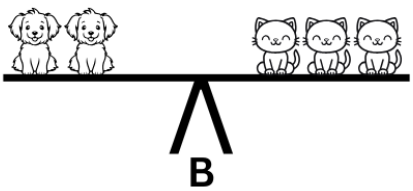
8. A team plays 5 games of soccer. The table below shows the number of <u>shots on goal</u> in each game, together with the number of <u>saves</u> made by the goalkeeper in each game. There were 4 shots on goal in game 5.

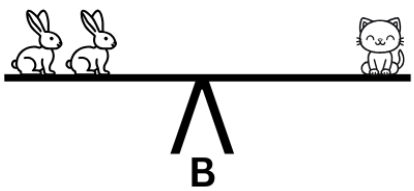
GAME	SHOTS ON GOAL	SAVES
1	7	5
2	11	9
3	8	7
4	5	3
5	4	?

   The goalkeeper saved $\frac{4}{5}$ of <u>all the shots on goal</u> over <u>all</u> 5 games.

   How many saves did the goalkeeper make in game 5?

9. Some animals are sitting on two seesaws. There is a perfect balance between the animals on the left of B and the animals on the right of B on each seesaw.
   (So for example, 2 dogs balance perfectly with 3 cats)





   How many rabbits will balance perfectly with 4 dogs?

10. All the digits in an even 4-digit natural number are different. What is the smallest possible value of this number if two of its digits are even and two of its digits are odd?

SECTION C

NB: Show all working and write your final answer in the allocated space. Part marks may be awarded.

11. The numbers 1 – 10 were written on ten cards and put in a box. Each card had a different number on it.

- The box fell over and 5 cards fell out and were lost.
- Even numbers were written on 4 of the lost cards and an odd number was written on the other lost card.

You now add up the numbers written on the remaining five cards.

What is the largest possible sum of the remaining five numbers?

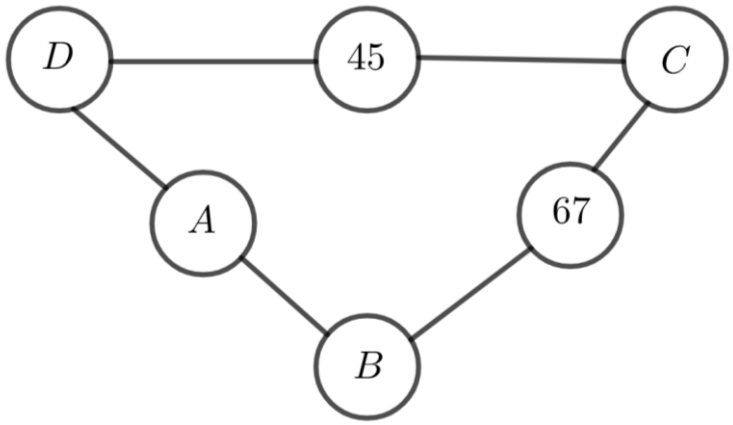
(Show all working)

12. Twenty cards either have a 4 or a 5 written on them. The sum of all the numbers written on the twenty cards is divisible by 19. (In other words there is no remainder when this sum is divided by 19)

How many cards have a 4 written on them? (Show all working)

13. A, B, C, and D are natural numbers in the figure on page 6. All numbers in the figure form a pattern.

The pattern is that the number in any center circle is the sum of the numbers in the two circles joining it. (For example: $A = B + D$)



If $B + C + D = 72$, what is the value of A?

(Show all working)

14. 96 bees fly into a flower garden. Either 4 bees or 5 bees land together on the flowers. (So every flower has only 4 or 5 bees on it)

What is the smallest number of flowers in the garden such that every bee can land on a flower?

(Show all working)

15. In a coded message, THA, MAT, MTH, and HAS are written as 217, 741, 124, and 782 respectively.

The digits in the coded numbers may or may not be in the correct order.

WORD	CODED NUMBER
THA	217
MAT	741
MTH	124
HAS	782

Find the code and use it to write out the digits of the four numbers 217, 741, 124 and 782 in their correct decoded order. Then answer the question below:

What is the correctly decoded 5-digit number for the word $MATHS$?

(Show all working)

********** END **********