

PRIMARY SCHOOL CHALLENGE 2025

LEVEL 2 CHALLENGE GRADE 6 AND 7 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 divisible by 3 and 9.

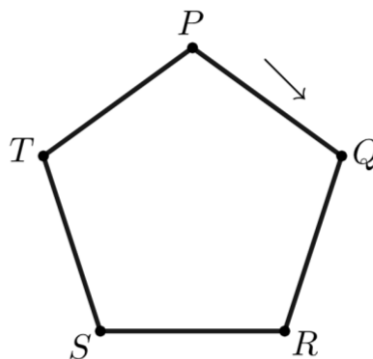
Which is the next closest year which will be divisible by 3 and 9?

- A. 2028 B. 2043 C. 2036 D. 2034 E. 2031

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 67 seconds?



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

3. 67 pens are handed out to 14 pupils. Five pupils received the same number of pens. Other than these five pupils, no other pupil received the same number of pens. Each pupil received at least one pen.

What is the largest number of pens a pupil could have received?

- A. 21 B. 12 C. 18 D. 13 E. 17

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

- Amy, Beth and Dee each order a cup of coffee
- Beth, Cath and Dee 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 total cost did Beth pay?

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

5. An invisible pattern is shown below. The pattern in each row is the same.

$$1 \oplus 1 = 1$$

$$3 \oplus 4 = 4$$

$$6 \oplus 16 = 8$$

$$3 \oplus 9 = 3$$

What is the value of $6 \oplus 25$?

- A. 7 B. 20 C. 12 D. 9 E. 10

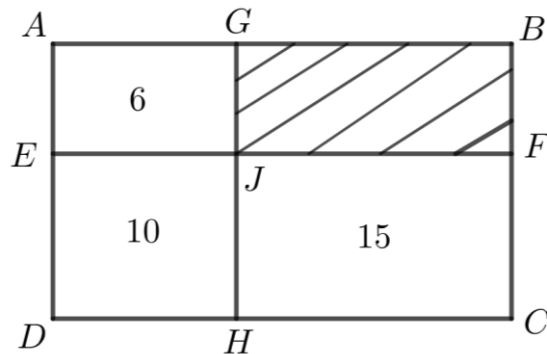
SECTION B

NB: Write only your answer in the allocated space.

6. Twenty cards have either a 6 or a 7 written on them. The sum of all the numbers written on the cards is divisible by 19.

How many cards have a 6 written on them?

7. Rectangle $ABCD$ is shown below. Lines EF and GH divide $ABCD$ into four rectangles as shown. Area $AGJE$ is 6. Area $EJHD$ is 10. Area $JFCH$ is 15.



What is the area of the shaded rectangle $GBFJ$?

8. $\frac{7}{6} = 1 + \frac{1}{1 + \frac{m}{n}}$ where m and n are natural numbers.

What is the largest possible value of $(m + n)$ such that $(m + n) < 20$?

9. A team plays 6 games of soccer. The table below shows the number of shots on goal in each game, together with the number of saves made by the goalkeeper. The goalkeeper made 7 saves in game 6.

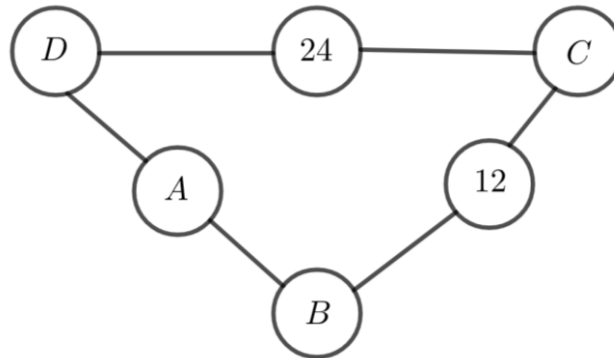
GAME	SHOTS ON GOAL	SAVES
1	10	9
2	8	6
3	4	4
4	4	3
5	9	7
6	?	7

The goalkeeper saved $\frac{6}{7}$ of the total shots on goal over the 6 games.

How many shots on goal were there in game 6?

10. A, B, C , and D are natural numbers in the figure below. All numbers in the figure form a pattern.

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



If $B \times C \times D = 48$, what is the value of A ?

SECTION C

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

11. Eli was thinking of a 3-digit natural number. The number was greater than 105 and less than 125. He noticed that if he added together any two digits in the number, the answer was always a prime number.

How many different such 3-digit numbers could Eli have been thinking about?

(Show all working)

12. The answer 2025 in the sum below is correct. However exactly five digits in the numbers being added together are not written in their correct places. All digits are in their correct rows.

$$\begin{array}{r} 53 \\ 835 \\ + \underline{3189} \\ 2025 \end{array}$$

What is the sum of the five digits which are not in their correct places?

(Show all working)

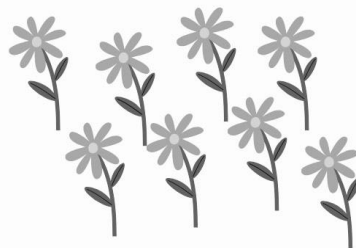
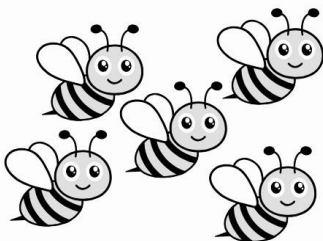
13. Jenna selects a 4-digit natural number. She removes one of the digits and uses the remaining digits in their same order to form a 3-digit number.

She then adds the 4-digit and 3-digit numbers together to get 7031.

What was the original 4-digit number selected by Jenna?

(Show all working)

14. 2025 bees fly into a flower garden. Either 6 bees or 7 bees land together on the flowers. (So every flower has only 6 or 7 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 the table below, each letter in the words shown represents a different 1-digit natural number.

The value of each word is the product of the values of the letters in the word.

(FOR EXAMPLE ONLY: If $D = 2$, $I = 6$, and $G = 4$, then the value of the word DIG would be: $2 \times 6 \times 4 = 48$)

WORD	VALUE
MOM	25
HOME	30
HOT	21
TAME	280
AS	24
MATHS	?

What is the value of the 5-digit word MATHS ?

(Show all working)

***** END *****