

LEVEL 1 CHALLENGE GRADE 4 AND 5 ROUND ONE

INSTRUCTIONS

1. The time allocated for this paper is 1 hour.
2. All participants must remain for the full allocated time.
3. Under no circumstances may extra time be given.
4. **This paper consists of 20 Questions over 2 Sections.**

Section A consists of 15 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. No mark will be awarded if two or more letters are circled without any crossing out.

Section B consists of 5 questions where only an answer must be given. Each question is worth 1 mark. Write only your answer in the allocated space.

5. Negative marking will not be applied. That is, marks will not be deducted for an incorrect answer.
6. Calculators (and other calculating devices) and geometry instruments are not allowed.
7. Figures are not necessarily drawn to scale.
8. Answer all questions on the answer sheet provided.
9. Paper may be used for rough working.

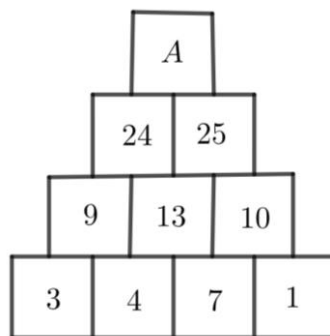
ENJOY AND HAVE FUN 😊

SECTION A

1. What is the value of $2024 + 2 + 0 + 2 + 4$?

- (A) 2030 (B) 2026 (C) 2028 (D) 2032 (E) 2034

2. A number pattern is hidden in the figure below.
What is the value of the number in block A ?



- (A) 51 (B) 49 (C) 50 (D) 52 (E) 48

3. Which one of the following is not equal to $6 + 6 + 6 + 6 + 6 + 6$?

- (A) $3 \times 6 + 3 \times 6$ (B) $7 \times 6 - 6$ (C) $3 + 3 + 4 \times 6$
(D) $6 + 5 \times 6$ (E) $4 + 4 \times 6 + 8$

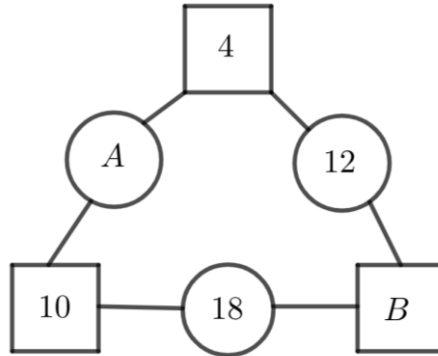
4. Which one of the following is another way of writing 2024?

- (A) $2 + 1000 + 24$ (B) $2000 + 204$ (C) $2 + 0 + 2 + 4$
(D) $2000 + 20 + 4$ (E) $20 + 24$

5. The multiples of 2 and 3 are all removed from the set of whole numbers 1 to 20.
What is the sum of the remaining numbers?

- (A) 91 (B) 68 (C) 60 (D) 73 (E) 56

6. In the picture below the sum of the numbers in any two squares is equal to the value of the number in the circle between them.

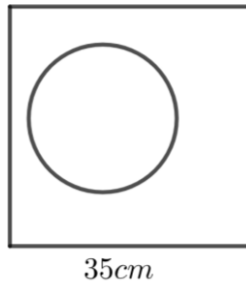


What is the sum of the numbers in Circle A and Square B ?

- (A) 22 (B) 26 (C) 24 (D) 20 (E) 28
7. We often use the four operations $+$; $-$; \times ; \div in mathematics.
- A special operation \odot is made up for this question. Carefully study the three examples which use this special operation below to see what it is doing. Then answer the question.
- $3 \odot 4 = 10$ $2 \odot 8 = 14$ $8 \odot 6 = 46$
- What is the value of $2 \odot (3 \odot 7)$?
- (A) 21 (B) 36 (C) 32 (D) 38 (E) 42
8. Using only the digits of 2024, how many 4-digit numbers can be made which are greater than or equal to 2024? Each digit must only be used once except for the digit 2 which must be used twice as there are two 2's in 2024.

- (A) 6 (B) 10 (C) 9 (D) 7 (E) 8

9. A circle is drawn anywhere inside a square below. The square has a side of 35cm.



What is the biggest possible radius of the circle if no part of it falls outside the square?

- (A) 16,5cm (B) 35cm (C) 8cm (D) 17,5cm (E) 18,5cm
10. How many of the following statements are always true?

- An odd number added to an odd number is always an even number.
- An even number multiplied by an odd number is always an odd number.
- An even number added to an odd number is always an odd number.
- An odd number plus 1 is always an even number.

- (A) 0 (B) 1 (C) 2 (D) 3 (E) 4
11. A special code uses the letters of the alphabet to make numbers.

Alphabet: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Three examples of the code are shown below. Carefully study these examples to find the code, then answer the question.

$$ONE = 34$$

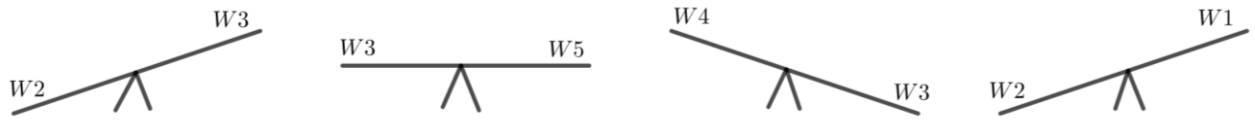
$$TWO = 58$$

$$THREE = 56$$

What is the value of $FOUR - FIVE$?

- (A) 28 (B) 16 (C) 8 (D) 26 (E) 18

12. Weights $W_1, W_2, W_3, W_4,$ and W_5 are placed at the end of seesaws as shown in the sketch below.



Which is the heaviest weight?

- (A) W_2 (B) W_5 (C) W_1 (D) W_3 (E) W_4
13. There are 64 coins in a jar. Eli puts his hand into the jar and takes out half the coins. He then keeps repeating this, taking out half of the coins left in the jar each time.

How many times does Eli take out half the coins in the jar before there is only one coin left in the jar?

- (A) 4 (B) 6 (C) 8 (D) 5 (E) 7
14. Kassie has a secret number x .
- She first multiplies this secret number by 5 and then subtracts 5 to get 75.
 - Instead of doing this she subtracted 1 from the secret number then divided by 5, getting an answer of y .

What is the value of $x + y$?

- (B) 18 (B) 22 (C) 20 (D) 22 (E) 19

15. Each of the numbers 1 to 8 are written on one side of 8 cards. Each card has only one number written on it. The cards are shown below in any order. Some are face up with the number visible and others are face down with the number hidden.



If you turn over cards marked *A* and *B*, what is the smallest possible product of the numbers written on these two cards?

- (A) 16 (B) 6 (C) 12 (D) 10 (E) 8

SECTION B

(Write your answer only in the allocated space)

16. In the equation below, the triangle \triangle represents the same number each time it is shown.

$$36 + \triangle = \triangle + \triangle + \triangle$$

What is the value of \triangle which will make this sum correct?

17. In 2024, Megan turned 12 years old and her mother turned 34 years old.

In which year will Megan be half her mother's age?

18. Sandile starts reading a book at 9.00am. He reads exactly 6 pages every 10 minutes and he finished reading the book at 11.20am on the same day.

How many pages were in the book if it took him exactly the same amount of time to read each page?

19. $2024202m$ is an 8-digit number. m is the units digit.

How many different values are possible for m if this number is divisible by 3 ?

20. The sum of four different natural numbers is 34.

Two of the numbers are odd and the others are even.

What is the value of the largest possible odd number?

***** END *****