Upper Primary Final Paper
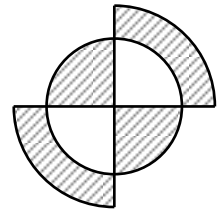
Exam Time: 26/02/2023 10:00-11:30

Your Full Name: _____

2023 School Year: _____

School Name: _____

Country: _____

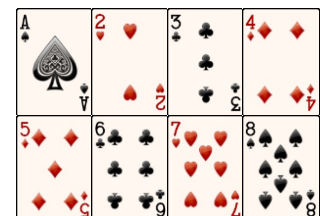**I. Fill in the blanks I** (8 marks per question, 32 marks in total)

1. $(2.4 + 0.1) \times (2.4 - 0.1) \div 0.25 =$ _____.

2. The sectors in the diagram on the right all have a circular angle of 90°; if the radius of the larger sector is 10, then the sum of the areas of the shaded parts of the diagram is _____. (π is taken as 3.14)

3. An item is sold at a 20% discount and still earns a 40% profit; then the original profit percentage before the discount on the item is _____%.

4. If a figure in the plane is rotated **180°** about a point, and the rotated figure coincides with the original figure, then the figure is called a **centrosymmetric figure,** and the point is called its **centre of symmetry**. As shown on the right are some pokers with face values 1-8.
    The sum of the face values on the pokers that are **centrosymmetric** is _____.

**II. Fill in the blanks II** (10 marks per question, 40 marks in total)

5. Fill in each box on the right with a number that makes the vertical equation hold;
then the product of the vertical equation is _____.

$$
\begin{array}{r}
\square\square\square \\
\times\quad\square\square \\
\hline
2\ 0\ 2\ 3 \\
\square\square\square \\
\hline
\square\square\square\square\square
\end{array}
$$

6. The judges at the Qatar World Cup are divided into: Chief judges, Assistant judges, and Video judges; where there are $\frac{1}{3}$ fewer Video judges than Chief judges, and 33 more Assistant judges than Chief judges, but the Assistant judges are 3 less than three times as many Video judges; there are _____ judges in total in the Qatar World Cup.

7. A five-digit number with different digits is divisible by the difference of any two digits of itself; then the smallest value of this five-digit number is _____.

8. After Mr. Chan told Amelia and Brian two numbers each, the three of them had the following conversation **in turn:**
Mr. Chen: "*These four numbers are different natural numbers from 1 to 7, and the sum of each of your numbers is not equal. You both only know your own numbers, are you able to tell whose sum is greater?* "
Amelia: "*I can't tell.* "
Brian: "*I still can't tell.*"
Amelia: "*Now I still can't tell.*"
Brian: "*Now I can tell that my sum is greater than Amelia's, but I can't tell what each of Amelia's two numbers is.*"
Amelia: "*Now I can tell what each of Brian's two numbers is. He has a number that differs from one of mine by 1.*"
None of them lies in the conversation and that if A's numbers are *A* and *B*, B's numbers are *C* and *D* and $A < B$ and $C < D$, then the four-digit number $\overline{ABCD}$ is _____.

III. Fill in the blanks III (12 marks per question, 48 marks in total)

9. Fill in each of the six circles on the right with the smallest six prime numbers, using each prime number exactly once, so that the sum of the numbers in each line is equal; then the value of $A \times B \times C$ is _____.
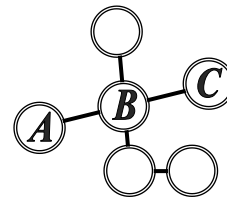
10. Amelia travels from *City A* to *City B*, while Brian travels from *City B* to *City A*. They meet head-on for the first time at *Place C*, 100 km from *City A*. Upon reaching each other's starting point, they both turn around and increase their speed to twice their original speed; they both turn around and travel for some time before meeting head-on for the second time, and Amelia travels another 48 km before reaching *Place C* for the second time. The distance between *City A* and *City B* is then _____ km.
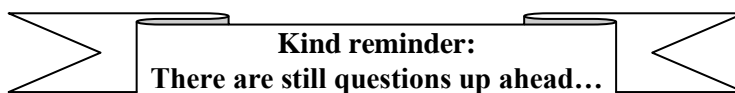
11. Colour the circles in the diagram on the right with Red, Yellow and Blue, such that:
    for each red circle there are yellow and blue circles adjacent to it;
    for each yellow circle there are red and blue circles adjacent to it;
    for each blue circle, there are yellow and red circles adjacent to it.
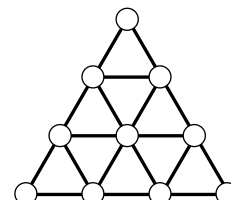
    Then there are a total of _____ different colouring methods that satisfy the condition.

12. In your opinion, Question _____ is the best in the paper. (Select from Q1 – Q11, Q13 and Q14)

    In your opinion, the difficulty of this paper is rated as _____. (The easiest being "1" and the hardest being "9", select from 1 – 9)

    In your opinion, the most difficult question is Question _____. (Select from Q1-Q11, Q13 and Q14)

    All responses within the answer section will be awarded marks and all responses will be considered as valid for your own assessment of this paper; no marks will be awarded for non-responses or for responses outside the answer section...

Kind reminder:
There are still questions up ahead…

IV. Short-answer questions (15 marks per question, 30 marks in total)

13. As shown, rectangle *ABCD is* divided into six triangles and a quadrilateral; if the areas of *ΔAGH*, *ΔCEH* and *ΔABE* are 33, 44 and 55 respectively:
    1) Find the area of rectangle *ABCD*. (6 marks)
    2) Find the area of the shaded quadrilateral *CFGH*. (9 marks)
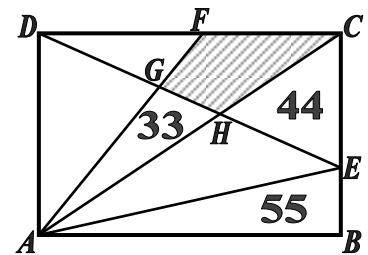
14. Each of the cell in the 50×50 table on the right is filled with a natural number which is arranged according to a certain pattern.
    1) Find the sum of the 50 numbers in the fourth column from the left. (3 marks)
    2) What is the smallest positive integer that does not appear in the table? (5 marks)
    3) If we put a "cross" in this table (e.g. the shaded region) such that the sum of the five integers inside this "cross" is a multiple of 2023, what is the largest number inside this "cross"? (7 marks)