

PRIMARY SCHOOL CHALLENGE 2023

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. What is the value of: $(20 + 23) + (20 - 23)$?

- A. 40 B. 20 C. 46 D. 43 E. 23

2. Town A is 65 kilometres north of me. Town B is 32 kilometres south of me. Town C is 15 kilometres north of Town B.

What is the distance in kilometres between Town A and Town C?

- A. 112 B. 82 C. 75 D. 80 E. 72

3. A standard 6-sided dice has the numbers 1 - 6 on each side. (Each number is used only once) The dice is rolled once and the number on top is noted.

Which of the following is the least likely to be the number on top?

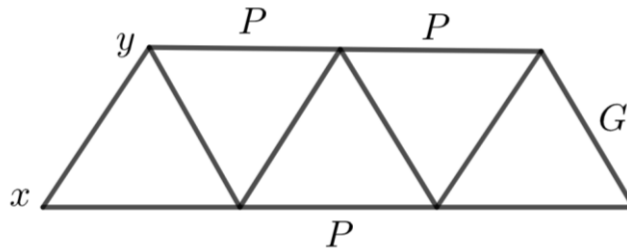
- A. An odd number B. A factor of 4 C. A multiple of 3
 D. An even prime number E. A factor of 6

4. M is an odd number. N is an even number. P is an odd number.

$M \times P + N + 2$ will:

- A. Always be even B. Sometimes be odd C. Always be odd
 D. Sometimes be even D. Sometimes be odd and sometimes be even

5. Eleven toothpicks are to be joined together into the shape shown below. The toothpicks are going to be painted either Pink (P), Yellow (Y), or Green (G). Four of the toothpicks are already painted as shown.



What colour could the toothpick shown as xy be painted if every triangle has sides of a different colour?

- A. G or P B. Y C. Y or G D. G E. P or Y

SECTION B

NB: Write only your final answer in the allocated space.

6. A piece of thin wire is 60cm long. The wire is to be cut into lengths, and each length will be used to make a wire square. Each square made will have an area of 4cm^2 .



What is the largest number of wire squares that can be made?

7. In the sum below, P , Q , and R are different digits $1 - 9$.

$$\begin{array}{r} PP \\ QQ \\ + RR \\ \hline PQR \end{array}$$

What is the value of the 3-digit number PQR ?

8. Amy and Josh choose the same natural number together. They both then begin counting up from the number in two's. (eg, if they both chose 11, then they would count 13, 15, 17,) When they stop counting, Josh has counted one more number than Amy. The sum of Amy's numbers is 252, and the sum of Josh's numbers is 301. Their sums include the number they chose to start with.

Which number did they both first choose?

9. How many 2-digit numbers are there with both digits odd but different?

10. Renee was thinking about a number. She added 3 to the number, then she divided the new number by 9, and finally she subtracted 10 from the result. After this her original number had changed to 7.

What number did Renee first think about?

SECTION C

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

11. Clues to a hidden 3-digit code are given as follows:

3	5	2	<i>G R R</i>
5	2	4	<i>R R R</i>
6	4	3	<i>B B R</i>
4	5	8	<i>B R R</i>

G: one of the numbers is in the correct position

R: one of the numbers is not present

B: one of the numbers is present but not in the correct position

What is the hidden 3-digit code?

(Show all working)

