

PRIMARY SCHOOL
CHALLENGE 2019

LEVEL 2 CHALLENGE
GRADE 6 AND 7 ROUND ONE

INSTRUCTIONS

1. The time allocated for this paper is 1 hour.
Under no circumstances may extra time be given.
2. This paper consists of 20 multiple choice questions.
Each question only has one correct answer.
3. Questions 1-15 are each worth 1 mark. Questions 16-20 are each worth 2 marks.
4. Negative marking will not be applied.
5. Calculators (and other calculating devices) and geometry instruments are not allowed.
6. Figures are not drawn to scale.
7. Answer all questions on the answer sheet provided.
8. 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.
9. Paper may be used for rough working.

1. What is the value of $7 - 3 \div \frac{1}{2} + 5 \times 0$?

- (A) $5\frac{1}{2}$ (B) 2 (C) 6 (D) 1 (E) $10\frac{1}{2}$

2. Which of the following fractions is the largest?

- (A) $\frac{23}{60}$ (B) $\frac{1}{3}$ (C) $\frac{5}{12}$ (D) $\frac{7}{20}$ (E) $\frac{2}{5}$

3. If x is a *perfect square* from 1 to 64, both numbers included, how many possible different *prime numbers* may be formed using the expressions $x+1$ and $x-1$.

- (A) 4 (B) 6 (C) 3 (D) 2 (E) 5

4. In the diagram, what is the value of N?

| | | | | |
|----|---|----|---|--|
| 3 | | | | |
| 6 | 7 | | | |
| 15 | N | 9 | | |
| 21 | 6 | 12 | 2 | |

- (A) 3 (B) 8 (C) 5 (D) 4 (E) 1

5. If $10 ; 9 = 110$
 $9 ; 7 = 81$
 $8 ; 5 = 56$
 $7 ; 3 = 35,$ what is the value of $6 ; 1$?

- (A) 21 (B) 7 (C) 14 (D) 6 (E) 18

6. Nine cards are shown, numbered 1 – 9. One card is turned over. The sum of the remaining cards is four times the value of the card turned over. What is the number on the card that was turned over?

4 7 8 1 3 5 9 2 6

- (A) 6 (B) 8 (C) 7 (D) 9 (E) 5

7. The cost of a second hand car and a trailer is R75 000. A signboard states that the car costs R50 000 more than the trailer. How much did the car cost?

- (A) R62 000 (B) R70 000 (C) R62 500 (D) R65 000 (E) R65 500

8. A family of four orders 4 pizzas. Each pizza is cut into 8 equal sector pieces. The son eats twice as many pieces as the daughter, and the father eats twice as many pieces as the mother. If everyone eats pizza, what is the minimum number of pieces left over?

- (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

9. What is the value of $\frac{1+2+3+\dots+2016+2017+2018}{2019}$?

- (A) 2019 (B) 1018 (C) 2018 (D) 1009 (E) 1019

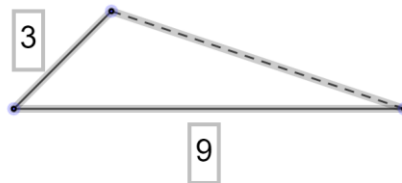
10. What is the difference between the largest odd 5-digit number with different digits and the smallest odd 5-digit number with different digits, where neither of the numbers is divisible by 5?

- (A) 88530 (B) 86416 (C) 89996 (D) 88526 (E) 88536

11. A tin contains R2 and R5 coins adding up to R918. What is the least possible number of coins in the tin?

- (A) 178 (B) 456 (C) 186 (D) 218 (E) 168

12. A triangle has a base of 9 units and a side of 3 units. If the third side is a *whole number*, how many different lengths can this side be?



- (A) 6 (B) 4 (C) 5 (D) 3 (E) 7

13. $A = \frac{30}{B-3}$, where A and B are *whole numbers*. If B is less than 30, how many different values can A have?

- (A) 8 (B) 5 (C) 6 (D) 7 (E) 9

14. If $\frac{1}{a} \otimes \frac{1}{b} = \frac{1}{a \times b} + a - b$, what is the value of $\frac{1}{2} \otimes 1$?

- (A) 3 (B) $\frac{3}{2}$ (C) 2 (D) $\frac{5}{2}$ (E) 1

15. Given $M = (5 \times a) - (10 \div b) + (6 + c) - (12 - d)$, where a, b, c, d each uniquely represent one digit of 2019, what is the maximum value of M ?

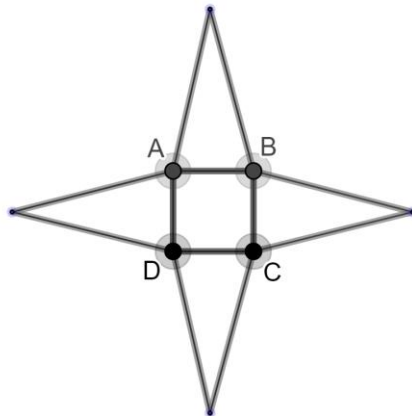
- (A) 39 (B) 15 (C) 31 (D) 35 (E) 29

19. Weights of 9 kilograms, A kilograms, and B kilograms are placed on balance beams as shown (like a seesaw). If B is less than 16 kilograms (kg), and A and B are *whole numbers* larger than zero, what is the sum of the total possible weights of B?



- (A) 54 kg (B) 65 kg (C) 75 kg (D) 80 kg (E) 50 kg

20. In the figure, ABCD is a square. Four isosceles triangles are constructed on each side of the square such that the perpendicular height of each triangle is twice the length of AB. If the area of the total figure is 405 cm^2 , what is the area of a single triangle in cm^2 ?



- (A) 25 (B) 64 (C) 49 (D) 36 (E) 81

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