

PRIMARY SCHOOL  
CHALLENGE 2018

**LEVEL 2 CHALLENGE**  
**GRADE 6 AND 7 ROUND ONE**

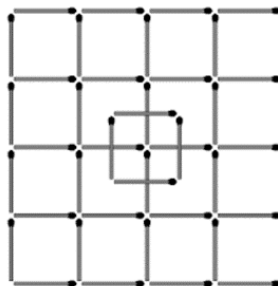
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**INSTRUCTIONS**

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. Each question is worth one mark.
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. Which of the following numbers is divisible by 2, 5, 10, 100 and 250?
- (A) 30 250      (B) 6 125      (C) 1 000 100      (D) 203 000      (E) 3 255
2. What is the answer to  $4,8 \times 0,31$ ?
- (A) 1 488      (B) 14,88      (C) 1,488      (D) 0,1488      (E) 148,8
3. What is the square of the difference between the largest and the smallest of any three consecutive numbers?
- (A) 9      (B) 4      (C) 1      (D) 100      (E) 2

4. How many squares can you count in the figure shown?

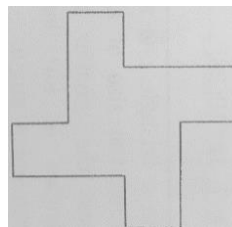


- (A) 17      (B) 35      (C) 21      (D) 25      (E) 31

5. In triangle UWY,  $\hat{U} = 120^\circ$  and  $\hat{W}$  is five times  $\hat{Y}$ . What is the size of  $\hat{Y}$ ?

- (A)  $50^\circ$       (B)  $18^\circ$       (C)  $15^\circ$       (D)  $20^\circ$       (E)  $10^\circ$

6. In the figure, all the long lines are twice as long as the short lines. All the angles are right angles. If the area of the shape is  $200\text{cm}^2$ , find the perimeter of the shape.



- (A) 70cm      (B) 60cm      (C) 80cm      (D) 120cm      (E) 100cm

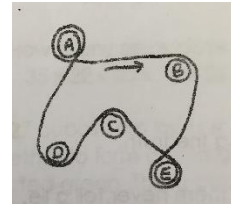
7. In rugby, it is possible to score 3, 5 or 7 points at a time. If South Africa wins the next Rugby World Cup and scores 34 points in the final, what is the highest number of times 3 points could have been scored by them?

- (A) 7      (B) 8      (C) 9      (D) 10      (E) 11

8. What is the value of  $(2 + 4 + 6 + \dots + 198 + 200) - (1 + 3 + 5 + \dots + 197 + 199)$ ?

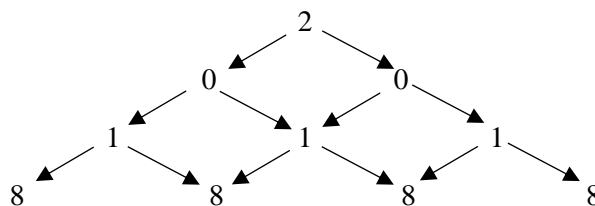
- (A) 100                      (B) 199                      (C) 200                      (D) 99                      (E) 101

9. If the belt in the figure moves in the direction of the arrow, which of the pulleys (A to E) move(s) anti-clockwise?



- (A) only A and C    (B) A, D and E    (C) B, C and E    (D) A, C and E    (E) only B and D

10. In how many different ways can the number 2018 be formed while following the arrows in the figure alongside?



- (A) 8                      (B) 7                      (C) 6                      (D) 5                      (E) 4

11. The instructions on a one-litre bottle of orange juice concentrate suggest using one-part concentrate to four-parts water to make the best strength orange juice. How many 250ml glasses could be filled if the whole bottle of concentrate is used and the instructions are followed exactly?

- (A) 2                      (B) 20                      (C) 24                      (D) 4                      (E) 16

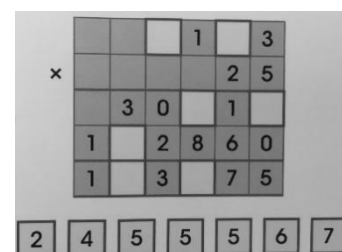
12. I am a 4-digit number. My first 2 digits from left are divisible by 5. My 3<sup>rd</sup> and 4<sup>th</sup> digits from left are divisible by 9. The sum of my digits is 18. Each of my digits is different. I am divisible by 4. I am less than 6000. My units digit is twice my tens digit. What number am I?

- (A) 4 536                      (B) 3 582                      (C) 8 046                      (D) 5 563                      (E) 1 536

13. Eve was helping her dad sort a box of loose photographs. They organised them into five piles: family, friends, holidays, school and sports. They wanted to put the photographs into albums in the ratio of 4:3:3:1:1. The empty albums they had to use could hold 372, 300, 250, 180, 100 and 80 photographs. Which two albums can they use to store their photographs in the required ratio?

- (A) 372 and 80    (B) 300 and 100    (C) 250 and 180    (D) 372 and 180    (E) 300 and 80

14. Place the given numbers correctly into the long multiplication sum. What will the final answer be?



- (A) 163 575                      (B) 153 575                      (C) 153 675                      (D) 173 475                      (E) 153 575

15. There are 10 pairs of brown socks, 1 pair of red socks and 1 pair of green socks all mixed up in a cupboard. If you are blindfolded and reach in to take out one sock at a time, what is the least number of socks you need to take out to be sure that you have a matching pair of the same colour?

- (A) 3                      (B) 4                      (C) 6                      (D) 7                      (E) 9

16. A pie chart showed the favourite book genres of each child in a group. The results were: Mystery 48; Science Fiction 40; Fantasy 30; History 20; Biography 15; Reference 15; Poetry 12. What size angle of the pie chart will be taken up by the Mystery genre?

- (A) 26°                      (B) 48°                      (C) 96°                      (D) 90°                      (E) 106°

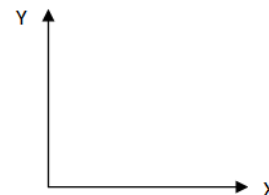
17. In a game of Scrabble, there are a certain number of tiles for each letter, plus two blank tiles.

<b>Letter</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	
<b>Number of tiles</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>12</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>2</b>	
<b>Letter</b>	<b>N</b>	<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>Blank</b>
<b>Number of tiles</b>	<b>6</b>	<b>8</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>

As a percentage, what chance does the first person have of picking a vowel for his or her first tile?

- (A) 5%                      (B) 42%                      (C) 20%                      (D) 19%                      (E) 43%

18. Jay drew  $x$  and  $y$  axes on 1cm graph paper and marked each at 1cm intervals. He marked the following coordinates on the paper: A (3,4); B (2,7); C (7, 9); D (9, 7); E (8, 3). Jay then joined the points in the order he had marked them, finally joining point E to point A. What is the name of the shape he drew?



- (A) irregular pentagon                      (B) square                      (C) regular pentagon                      (D) parallelogram                      (E) rhombus

19. Using any digit of 2018 only once in a specific calculation involving  $\times$ ,  $\div$ ,  $+$  or  $-$ , or any combination of these operations, how many prime numbers can be obtained?

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

20. The birthdays of all the children in Grade 6 at a Durban school are spread quite evenly across the year. The same number were born in May, August and October as were born in January. Twice as many were born in February as were born in December. Three less were born in July than were born in May. Two more were born in November than were born in April. The same number were born in June as were born in September. Nine were born in January. The same number were born in March as in November. Two more were born in February than in July. The same number were born in April as in July. One more was born in March than in June and September. How many children in total were in Grade 6 at this school?

- (A) 86                      (B) 92                      (C) 105                      (D) 88                      (E) 90