

**MATHEMATICS OLYMPIAD COMPETITION 2018  
SELECTION TEST FOR ZONAL LEVEL TRAINING POOL**

General Instructions.

- Answer all 20 questions.
- Write the answer on the dotted line given under each question and it is necessary to mention the relevant units if any with the answer.
- Diagrams are not to scale.

Index No :	.....
School :	.....
Grade :	.....

Time : 1 hour

1. Find the difference, the number **2018** and the mirror image of the number.

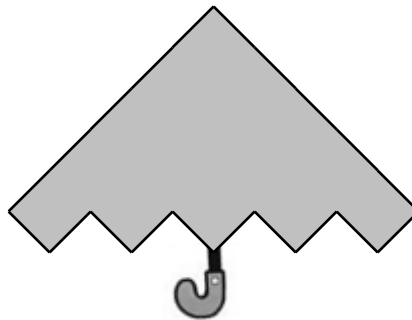
Answer:.....

2. The four digits 2, 3, 8 and 9 are placed in the boxes so that when both two-digit numbers are added, the sum is as large as possible. What is this sum?

$$\square \square + \square \square$$

Answer:.....

3. In the figure below, Tom combined some squares of the same size into a shape of umbrella. Find the least number of squares he would use.



Answer:.....

4. Chathuri puts some blue and red cubes in a box. The ratio of the number of blue cubes to the number of red cubes is 2 : 1. She adds 12 more red cubes in the box and the ratio becomes 4 : 5. How many blue cubes are there in the box initially?

Answer:.....

5. If  $n$  is a whole number, find the sum of the values of  $n$  is  $\frac{2018}{n}$  also a whole number?

Answer:.....

6. Amal has a 45-minutes music lesson and 1-hour science lesson every Tuesday afternoon after school. If it begins at 3:30pm with 20 minutes interval, at what time does it finish?

Answer:.....

7. When I opened my new Mathematics book the sum of the two page numbers facing me was 317. What is the number of the next **odd** page?

Answer:.....

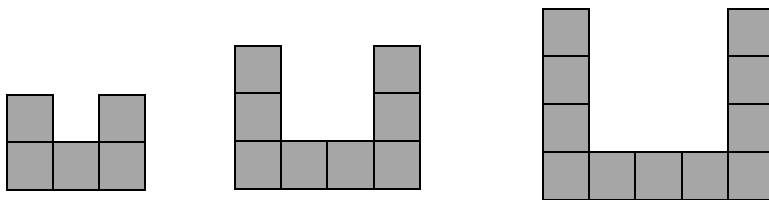
8. Given that  $a \times b = 2018$ , and  $a$  and  $b$  are whole numbers, how many possible pairs  $(a, b)$  are there?

Answer:.....

9. The sum of the ten digits in Nimal's telephone number is 34. The first eight digits are 075 322 9. How many possibilities are there for the last two digits?

Answer:.....

10. Bimal uses identical square tiles to make the following figures. If he continues using the same pattern, in which figure will there be 6056 tiles?



Answer:.....

11. In the following alphametic, all the different letters stand for different digits. Find the two-digit sum  $G$  and  $K$ .

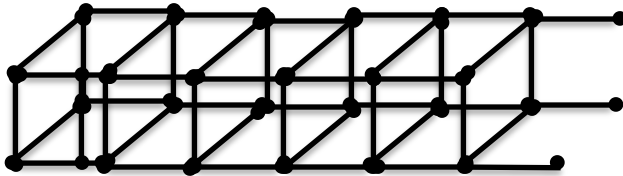
	K	P
	K	P
	K	P
+	K	P
	G	K

Answer:.....

12. In a family with two sons and two daughters, the sum of the children's ages is 55. The two sons were born three years apart, and the two daughters were born two years apart. The younger son is twice the age of the older daughter. How old is the youngest child?

Answer:.....

13. A class has 2018 matchsticks. Using blobs of modeling clay to join the matches together, they make a long row of cubes. This is how their row starts. How many cubes will they make?

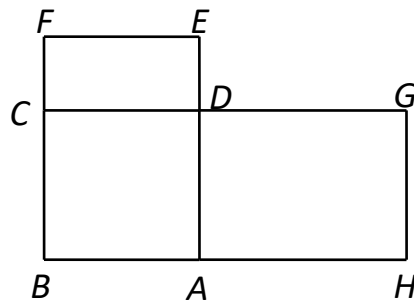


Answer:.....

14. With some 3-digit numbers, the third digit is the sum of the first two digits. For example, with the number 213 we can add 1 and 2 to get 3, so the third digit is the sum of the first two digits. How many 3-digit numbers are there where the third digit is the sum of the first two digits?

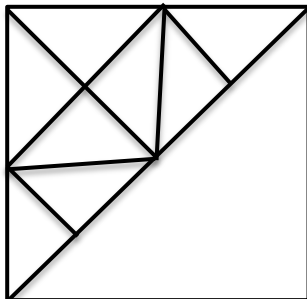
Answer:.....

15. In the figure below, the area of square  $ABCD$  is  $49 \text{ cm}^2$ , the area of rectangle  $CDEF$  is  $21 \text{ cm}^2$  and the area of  $ADGH$  is  $84 \text{ cm}^2$ . What is the perimeter, in cm, of  $BFEDGH$ ?



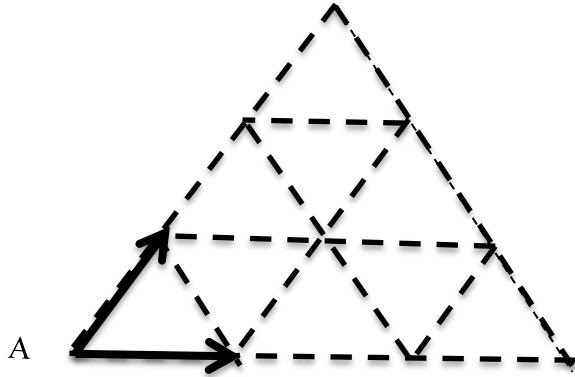
Answer:.....

16. How many triangles are there in this figure?



Answer:.....

17. In the figure below, the side length of large equilateral triangle is 6 cm. Each side is divided into 3 equal segments and connects corresponding dividing points to get an equilateral network. Find the number of lattice points in the figure, 4cm distance from the point A.



Answer:.....

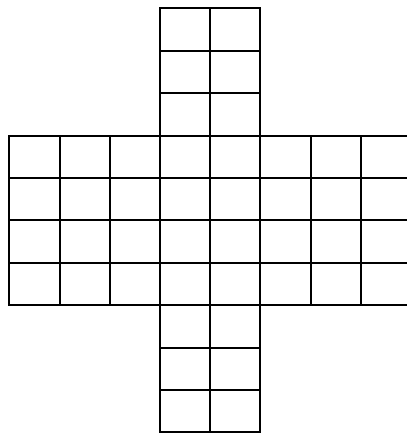
18. When a barrel is  $\frac{1}{4}$  full it contains 54 liters. How many liters does it hold when it is  $\frac{2}{3}$  full?

Answer:.....

19. In a Mathematics quiz, Ranil wins 250 points for a correct answer but loses 150 points for an incorrect answer. Ranil answered 15 questions and obtained 2150 points. How many questions did he get correct?

Answer:.....

20. The diagram shows a net for an open top box. Small square of the figure is  $1 \times 1 \text{ cm}^2$ . It is to be filled with  $1 \times 1 \text{ cm}^3$  cubes. How many cubes will the box hold?



Answer:.....