

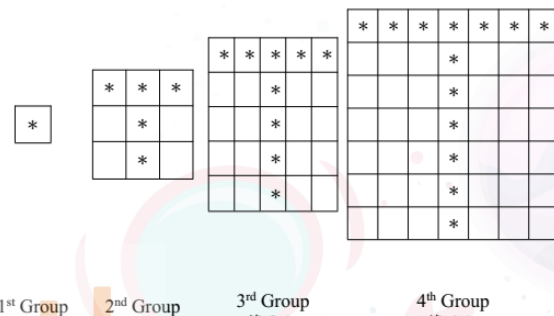
**THAILAND INTERNATIONAL
MATHEMATICAL OLYMPIAD FINAL ROUND
2022 - 2023**

PRIMARY 3

Open-Ended Questions (1st ~30th) (5 points for correct answer, no penalty point for wrong answer)

Logical Thinking

1. According to the pattern shown below, how many * is / are there in the 21st group?



2. If 17th April 2023 is Monday, which day of the week is 25th Aug 2023?

3. According to the pattern shown below, what should be the English letter Filled in the blank?

S 、 Q 、 N 、 J 、 _ 、

4. According to the pattern shown below, what is the number represented by “?” in the following table?

1	7	18	21	28
3	8	25	39	49
5	11	?	64	88
7	16	44	97	152

5. Edward is counting numbers from 2. Whenever the number counting is a multiple of 6, he claps his hands one time. What will the next number be after Edward clapped his hand 11 times?

6. Eric and all other students from class 3A are standing in rectangular formation. There are 3 students on Eric’s left hand side, 5 students on his right hand side, 2 students in front of him and 1 student behind him. How many student(s) is / are standing in the formation?

Arithmetic

7. What should be the number filled in the blank so that the equation below is correct?

$$38 \times \underline{\quad} = 266$$

Number Theory

13. The sum of 4 consecutive odd numbers is 48. Find the L.C.M. (Least Common Multiple) of the largest and smallest numbers among these 4 numbers.

14. Find the largest 2-digit number such that the remainder of it divided by 16 is 10.

15. Given that positive integers A and B satisfy the product of A and B is 832 and A is 13 times of B . Find the value of A .

16. The numbers below form an arithmetic sequence, what is the 11th number in the sequence?

561 , 549 , 537 , 525 , 513 , ...

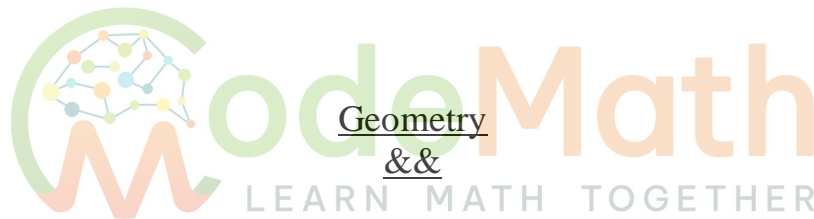
17. If A is an odd number, determine whether the result of

$$A \times [(3A + 14) + (11A + 19)] \div A$$

is an odd or even number.

18. If A and B are distinct 1-digit numbers, find the value of $A + B$.

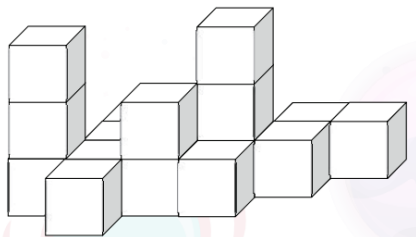
	A	B
\times	A	A
	5	28



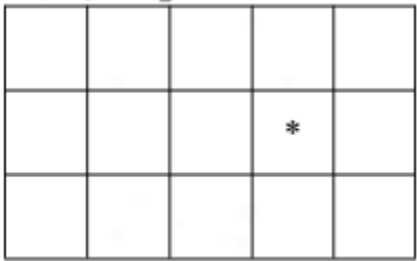
19. According to the pattern shown below, what should be the figure filled in the blank?



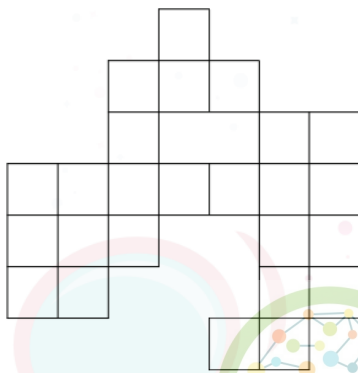
20. At least how many square(s) can be seen if viewing the figure below from the right?



21. How many rectangle(s) containing “*” is / are there in the figure below



22. How many square(s) is / are there in the figure below?



23. A square of side length 28 is cut into 16 identical squares. What is the difference between the perimeter of the original square and the sum of perimeters of the 16 squares?

24. A pyramid has 90 edges, how many face(s) does this pyramid have?

Combinatorics

25. If each of 25 students in Class 3A exchanges presents with each of the other students, at least how many exchange(s) is / are there?

26. Numbers are drawn from 115 integers 10 to 124 at random. At least how many distinct number(s) do we need to draw to ensure that there are two numbers chosen whose product is divisible by 14?



27. Find the number of 3-digit odd number(s) larger than 300 with no repeated digits.

28. If we are choosing 4 digits, without repetition, from 0, 6, 4, 5, 1 and 2 to form 4-digit numbers, how many of these 4-digit number(s) is / are even numbers?

29. A number with 3 digits or more is called “Special” if there are two or more digits of it being the same and its unit digit is not divisible by its hundreds digit, for example, 221, 255 and 388 are special numbers. How many 3-digit “Special” number(s) is / are there if its hundreds digit can only be 2, 3 or 4?



30. Chris has 26 \$1 coins, 9 \$2 coins and 12 \$5 coins, and he is buying cans of coke one at a time. Given that each can of coke costed \$6 and no charge is provided for each purchase, at most how many can(s) of coke can he buy?