



THAILAND INTERNATIONAL MATHEMATICAL OLYMPIAD FINAL ROUND 2020 – 2021

Primary 1

Time allowed: 120 minutes

Question Paper

Instructions to Contestants:

1. Each contestant should have ONE Question-Answer Book which CANNOT be taken away.
2. There are 5 exam areas and 6 questions in each exam area. There are a total of 30 questions in this Question-Answer Book. Each question carries 5 marks. Total score is 150 marks. No points are deducted for incorrect answers.
3. All answers should be written on ANSWER SHEET.
4. NO calculators can be used during the contest.
5. All figures in the paper are not necessarily drawn to scale.
6. Write down the answer in the simplest form. If the calculation result is a fraction, please write down the answer as a proper or mixed fraction, decimal figure is also accepted. Marks will NOT be given for incorrect unit.
7. This Question-Answer Book will be collected at the end of the contest.

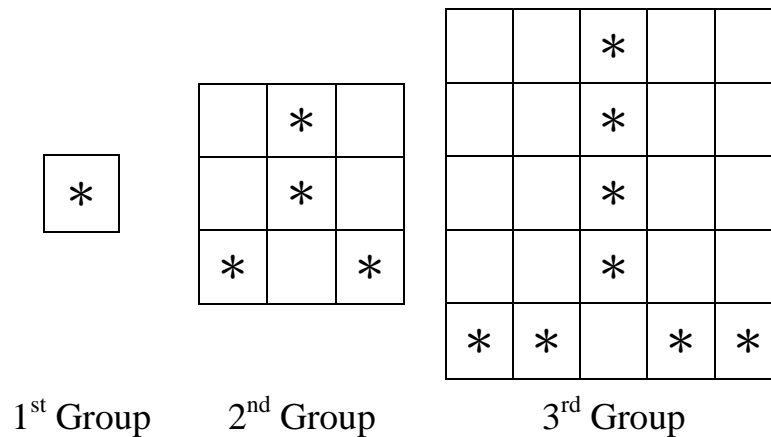
DO NOT turn over this Question-Answer Book without approval of the examiner.

Otherwise, contestant may be DISQUALIFIED.

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

Logical Thinking

1. If 3 days later will be Monday, which day of the week is today?
2. Chris is 12 years old now and Andy was 18 years old 3 years ago. What is the sum of their ages now?
3. Class 1F has 28 students queuing up in a row. If there are 14 students behind Peter, how many student(s) is / are in front of Peter?
4. According to the pattern shown, how many * is / are there in the 6th group?



5. According to the pattern shown, find the English letter in the space provided.
B 、 F 、 J 、 N 、 R 、 、
6. Jennifer is now playing “Clapping Game”. When she needs to call any odd numbers, she has to clap hands once instead of calling them out. Now the game starts from 2 in an ascending order. After clapping 19 times, what will the next number be?

Arithmetic

7. If A represents the same 1-digit number, what is the value of A if the equation is correct?

$$\begin{array}{r}
 9 \quad A \\
 + \quad 4 \quad A \quad A \\
 \hline
 5 \quad 3 \quad 8
 \end{array}$$

8. Find the value of $71+38+55+45+62+29$.
9. Find the value of $34-37+40-43+46-49+52-55+58-61+64$.

10. Find the value of $22 - 37 + 28$.

11. If A is a 1-digit number, what is the value of A if the equation below is correct?

$$A + A + A - A = 16$$

12. Find the value of $24 + 25 + 26 + 27 + 28 - 16 - 17 - 18 - 19 - 20$.

Number Theory

13. By observing the numbers, which odd number is the greatest?

23, 27, 52, 41, 72, 24, 50

14. Determine the result of $A + 3 + 2 \times A + 4 + 3 \times A + 5 + 4 \times A$ is an odd or even number.

15. The numbers below follow the arithmetic sequence, what is the 17th number?

243, 231, 219, 207, 195, ...

16. Find the largest 2-digit odd number whose the unit digit is smaller than the tens digit.

17. In a Science test, the total score of 4 students is 49. No students share the same score and no one got zero. If Andy got the lowest score among them, find the highest possible score of Andy?

18. According to the pattern shown below, what is the number in the space provided?

4, 12, 20, 28, 36, 44, __,

Geometry

19. It is known that figure 1 is formed by 4 cubes. At least how many cube(s) is / are there in figure 2?

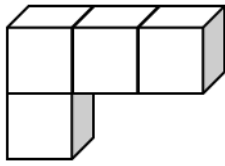


Figure 1

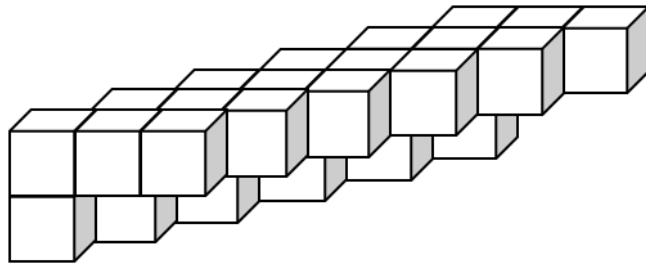
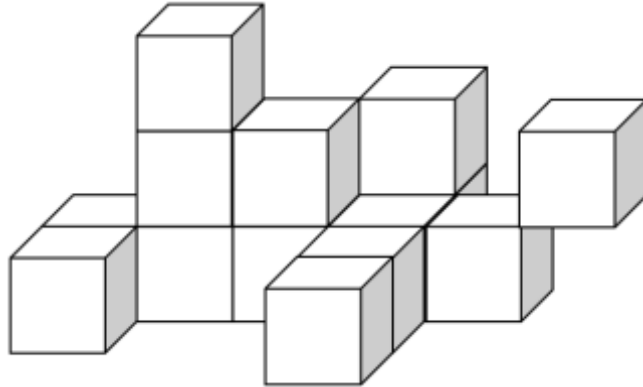
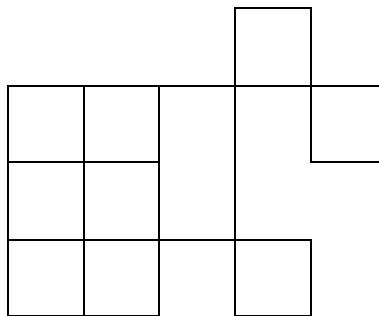


Figure 2

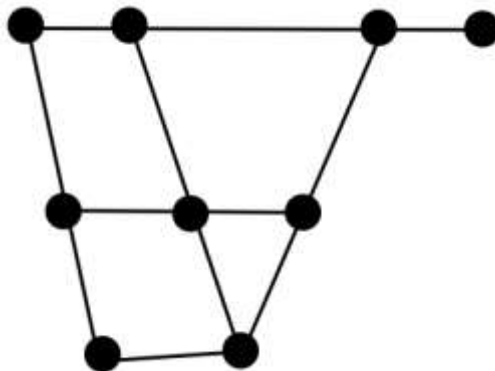
20. At least how many squares can be seen if viewing this figure from the right?



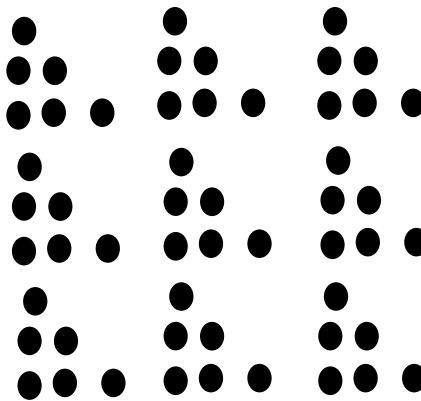
21. How many square(s) is / are there in the figure below?



22. How many line segment(s) is / are there in the polygon below?



23. How many dot(s) is / are there in the figure below?



24. According to the pattern shown below, what is the figure in the space provided?



Combinatorics

25. According to the following answers, how many 1-digit number(s) is / are there?

$$4+6, 9+4, 8-4, 17-5, 5+6, 11-7, 16-5$$

26. Bruce has 4 \$5 coins. At most how many \$2 coin(s) can he exchange?

27. Which number below is the smallest?

$$20203154 \text{ 、 } 20204651 \text{ 、 } 20214320 \text{ 、 } 20193451$$

28. Choose 4 digits, without repetition, from 0, 2, 3, 5 and 7 to form two 2-digit numbers and add them up. What is the maximum value of the sum?

29. How many 2-digit number(s) having the tens digit that is less than 5 is / are there?

30. According to the following sequence for first 37th terms, how many odd number(s) is / are there?

$$3, 1, 4, 5, 9, 14, 23, 37, \dots$$

~ End of Paper ~