



奧冠教育中心

OLYMPIAD CHAMPION EDUCATION CENTRE

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泰國國際數學競賽初賽 2020 - 2021

**THAILAND INTERNATIONAL
MATHEMATICAL OLYMPIAD
HEAT ROUND 2020 - 2021**

小學四年級 Primary 4

時限：90 分鐘

Time allowed: 90 minutes

試題

Question Paper

考生須知：

Instructions to Contestants:

1. 本卷包括 試題 乙份，試題紙不可取走。

Each contestant should have ONE Question-Answer Book which CANNOT be taken away.

2. 本卷共 5 個範疇，每範疇有 5 題，共 25 題，每題 4 分，總分 100 分，答錯不扣分。

There are 5 exam areas and 5 questions in each exam area. There are a total of 25 questions in this Question-Answer Book. Each carries 4 marks. Total score is 100 marks. No points are deducted for

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。

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.

請將答案寫在

答題紙

 上。

All answers should be written on the ANSWER SHEET.

incorrect answers.

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4. 比賽期間，不得使用計算工具。

NO calculators can be used during the contest.

5. 本卷中所有圖形不一定依比例繪成。

All figures in the paper are not necessarily drawn to scale.

6. 比賽完畢時，本試題會被收回。

This Question-Answer Book will be collected at the end of the contest.

本試題不可取走。

THIS Question-Answer Book CANNOT BE TAKEN AWAY.

未得監考官同意，切勿翻閱試題，否則參賽者將有可能被取消資格。

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

Otherwise, contestant may be DISQUALIFIED.

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Open-Ended Questions (1st ~25th) (4 points for correct answer, no penalty point for wrong answer)

Logical Thinking

1. This month is March. Which month will 184 months be later?

Bulan ini adalah bulan Maret. Bulan apakah 184 bulan kemudian?

2. According to the pattern shown below, how many triangle(s) is / are there from the 1st to the 300th symbol counting from the left?

Berdasarkan pola di bawah ini, berapa banyak segitiga yang ada dari urutan simbol ke-1 sampai urutan ke-300 dihitung dari kiri?



3. There are a total of 36 chickens and rabbits in a farm. The animals have a total of 96 legs. How many rabbit(s) is / are there?

Terdapat total 36 ayam dan kelinci di sebuah ladang. Hewan-hewan tersebut mempunyai total sejumlah 96 kaki. Berapa banyak kelinci yang ada di sana?

4. Betty now has a few coins. If the number of coins minuses 13, then is divided by 10, adds 3 and is multiplied by 7. The result will be 91. How many coins does Betty have?

Sekarang Betty mempunyai beberapa koin. Jika jumlah koinnya dikurangi 13, kemudian dibagi 10, ditambah 3 dan dikali 7. Hasilnya akan menjadi 91. Berapa koin yang Betty punyai?

請以最簡形式填寫答案。若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。
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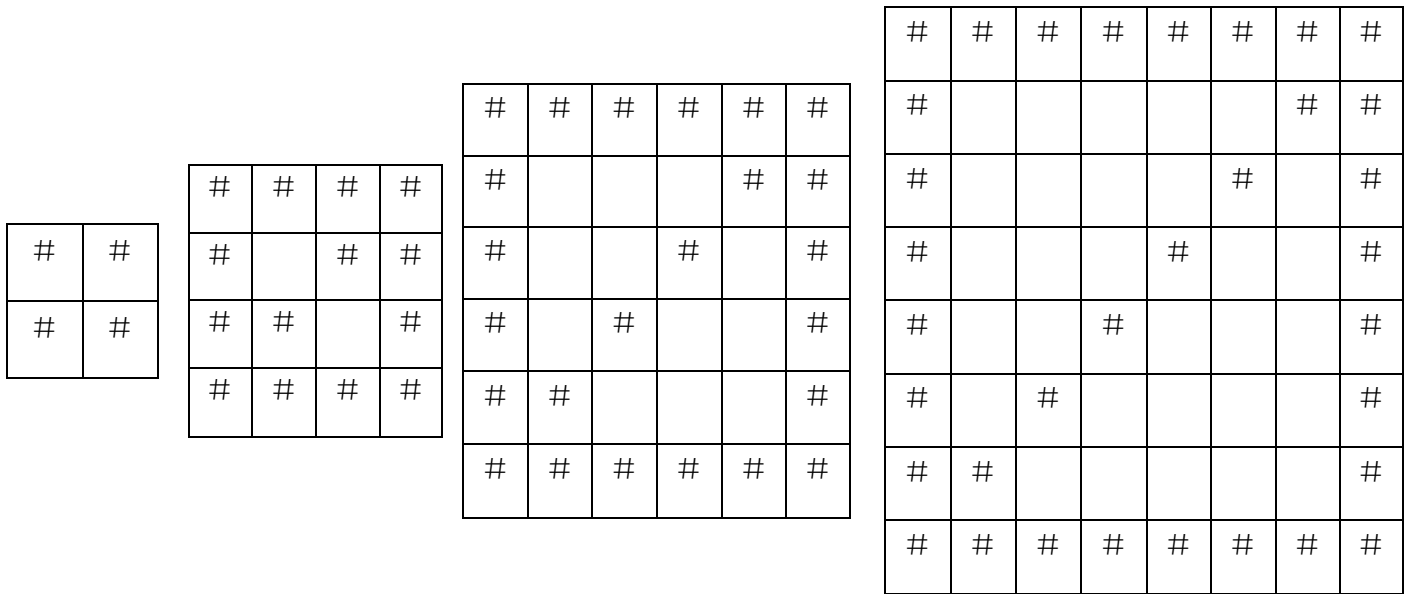
答題紙

 上。

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5. According to the pattern shown below, how many # is / are there in the 9th group?

Berdasarkan pola di bawah ini, berapa banyak # yang ada pada Kelompok 9?



1st Group

2nd Group

3rd Group

4th Group

Kelompok 1

Kelompok 2

Kelompok 3

Kelompok 4

Question 5

Soal No. 5

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。

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Arithmetic

6. Find the value of $26 \div 7 + 37 \div 7 - 10 \div 7 + 3 \div 7$.

Carilah nilai dari $26 \div 7 + 37 \div 7 - 10 \div 7 + 3 \div 7$.

7. Find the value of $81 \times 6 + 9 \times 31 - 3 \times 26$.

Carilah nilai dari $81 \times 6 + 9 \times 31 - 3 \times 26$.

8. Find the value of $2020 \div 18 \times 15 \times 24 \div 100$.

Carilah nilai dari $2020 \div 18 \times 15 \times 24 \div 100$.

9. Find the value of $34 + 41 + 48 + 55 + 62 + 69 + 76 + 83 + 90 + 97$.

Carilah nilai dari $34 + 41 + 48 + 55 + 62 + 69 + 76 + 83 + 90 + 97$.

10. Using the method of $S = 2S - S$, find the value of $7 + 14 + 28 + \dots + 896$.

Dengan menggunakan metode $S = 2S - S$, **carilah nilai dari** $7 + 14 + 28 + \dots + 896$.

Number Theory

11. The sum of 9 consecutive odd numbers is 1035. Find the value of the largest number.

Hasil penjumlahan 9 bilangan ganjil berurutan adalah 1035. Carilah bilangan terbesar.

12. Define the operation symbol $a \otimes b = (a \times 3 + b - 1) \times (a - b)$, find the value of $(6 \otimes 4) \otimes 40$.

Didefinisikan operasi simbol $a \otimes b = (a \times 3 + b - 1) \times (a - b)$, **carilah nilai dari** $(6 \otimes 4) \otimes 40$.

13. Find the unit digit of A if $A = 3 \times 8 \times 13 \times 18 \times 23 \times 28 \times \dots \times 2023 \times 2028$.

Carilah angka satuan dari A jika $A = 3 \times 8 \times 13 \times 18 \times 23 \times 28 \times \dots \times 2023 \times 2028$.

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14. If a 10-digit number $\overline{2021A2723A}$ is divisible by 6, find the value of A .

Jika bilangan 10-angka $\overline{2021A2723A}$ dapat dibagi 6, carilah nilai dari A .

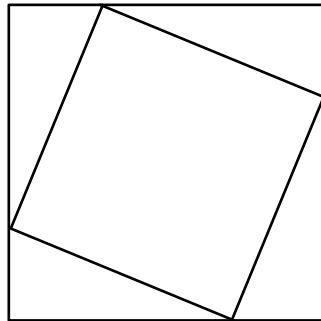
15. Mr Wong gives some pencils to students. If everyone gets 9 pencils, 5 pencils will be left. If everyone gets 8 pencils, 19 pencils will be left. How many pencil(s) does Mr Wong have?

Mr. Wong membagikan beberapa pensil kepada murid-murid. Jika setiap murid mendapatkan 9 pensil, maka pensil yang tersisa adalah 5. Jika setiap murid mendapatkan 8 pensil, maka pensil yang tersisa adalah 19. Berapa banyak pensil yang Mr. Wong punyai?

Geometry

16. The figure below is formed by 4 identical right-angled triangles. The areas of the big and the small squares are 64 and 36 respectively. Find the perimeter of the triangle.

Gambar di bawah ini dibentuk dari 4 segitiga siku-siku identik. Luas bujursangkar yang besar dan kecil masing-masing adalah 64 dan 36. Carilah keliling dari segitiga.



Question 16

Soal No. 16

請以最簡形式填寫答案。若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。

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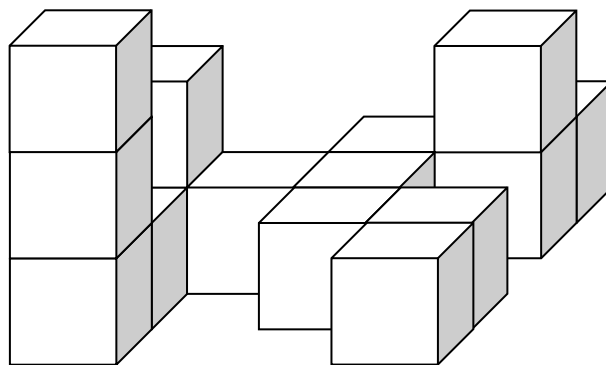
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17. The area of a rectangle is 162. If the sides of the rectangle are integers, find the maximum of the perimeter of the rectangle.

Luas dari persegi panjang adalah 162. Jika sisi-sisi dari persegi panjang tersebut adalah bilangan bulat, carilah keliling maksimum persegi panjang tersebut.

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

Setidaknya berapa banyak bujursangkar yang dapat terlihat jika bangun di bawah ini dilihat dari kanan?

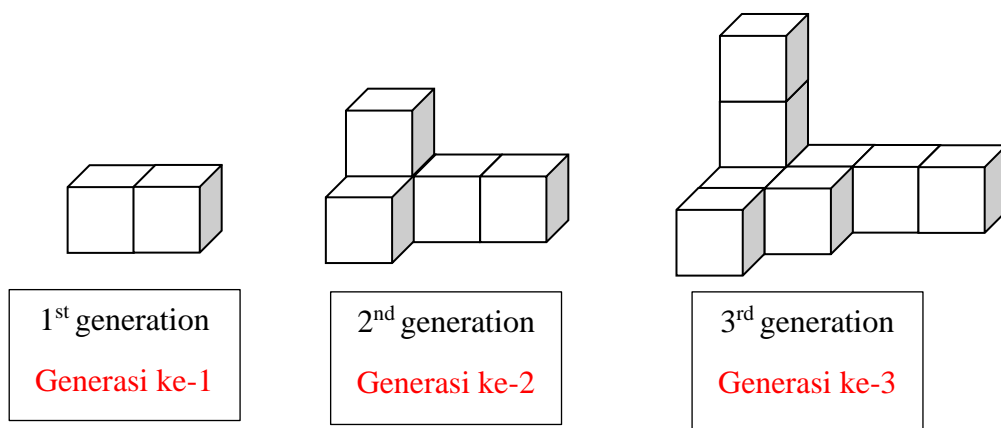


Question 18

Soal No. 18

19. According to the pattern shown below, how many cube(s) is / are there in 10th generation?

Berdasarkan pola di bawah ini, berapa banyak kubus yang ada di generasi ke-10?



Question 19

Soal No. 19

請以最簡形式填寫答案。若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。
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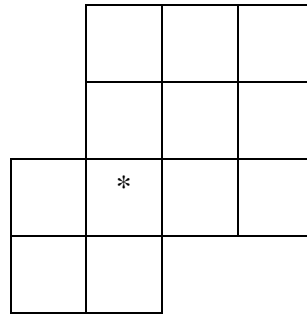
答題紙

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20. How many rectangle(s) with “*” is / are there in the figure below?

Berapa banyak persegi panjang yang mengandung “*” yang ada pada gambar berikut?



Question 20

Soal No. 20

Combinatorics

21. Numbers are drawn from the 30 integers 6 to 35. At least how many numbers are drawn at random to ensure that there are two numbers whose product is 80?

Bilangan diambil dari 30 bilangan bulat, 6 sampai 35. Setidaknya berapa banyak bilangan harus diambil secara acak untuk memastikan ada dua bilangan yang hasil kalinya 80?

22. How many 3-digit number(s) is / are there such that the number without digital repetition does not contain digit “0” or “8”?

Berapa banyak bilangan 3-angka yang ada yang tidak mempunyai pengulangan angka dan tidak mempunyai angka “0” atau “8”?

23. How many 3-digit odd number(s) is / are there so that the product of digits is 16?

Berapa banyak bilangan ganjil 3-angka yang ada di mana hasil kali angkanya adalah 16?

24. Find the smallest difference by using 6 digits from 0, 1, 3, 5, 7, 8, 9 without repetition to form two 3-digit numbers.

Carilah selisih terkecil dengan menggunakan 6 angka dari 0, 1, 3, 5, 7, 8, 9 tanpa pengulangan untuk membentuk 2 bilangan 3-angka.

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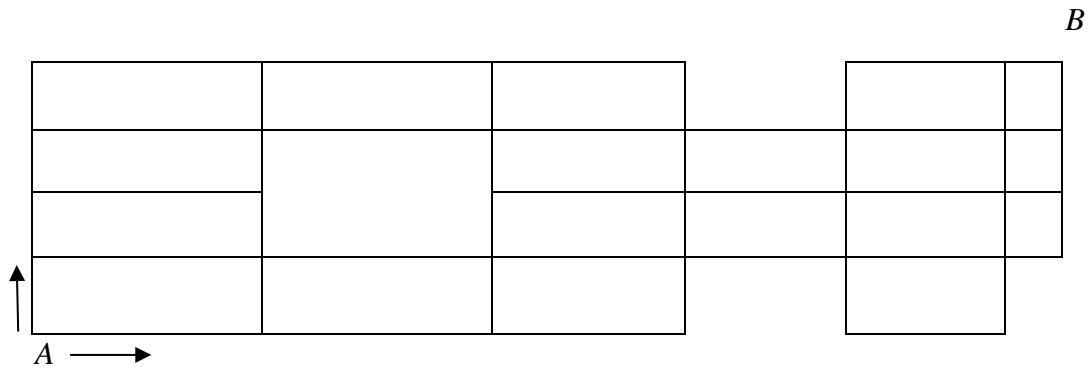
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25. If Andy goes from point A to point B , each step can only move up or move right. How many way(s) is / are there?

Jika Andy pergi dari titik A ke titik B , di tiap langkahnya dia hanya dapat bergerak ke atas atau ke kanan, berapa banyak cara yang ada?



Question 25

Soal No. 25

~ 全卷完 ~

~ End of Paper ~

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