



奧冠教育中心

OLYMPIAD CHAMPION EDUCATION CENTRE

Room 309-310, 8 Jordan Road, Yau Ma Tei, Kowloon, Hong Kong SAR, CHINA

Tel (852) 3153 2028 / 9310 1240 Fax (852) 3153 2074

Website: www.olympiadchampion.com Email: olympiadchampion@gmail.com



世界國際數學競賽總決賽 2018

WORLD INTERNATIONAL
MATHEMATICAL OLYMPIAD FINAL 2018

幼稚園組 Kindergarten Group

時限：120 分鐘

Time allowed: 120 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 6 題，共 30 題，每題 5 分，總分 150 分，答錯不扣分。
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 carries 5 marks. Total score is 150 marks. No points are deducted for incorrect answers.
3. 請將答案寫在 答題紙 上。
All answers should be written on ANSWER SHEET.
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.

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.

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.

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。

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填空题 (第 1 至 30 題) (每題 5 分, 答錯及空題不扣分)

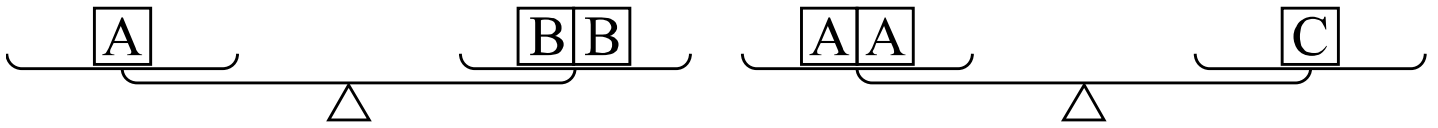
Open-Ended Questions (1st ~30th) (5 points for correct answer, no penalty point for wrong answer)

Logical Thinking

邏輯思維

1. Which of the blocks is the heaviest?

下圖中哪一個積木最重?



Question 1

第 1 題

2. Attached figure shows a cryptarithm, where A , B and C stands for different numbers. Find the value of B .

參考附算式, A 、 B 和 C 各代表 1 個數字, 求 B 的值。

$$\begin{array}{r} B C \\ + B A \\ \hline 8 8 \end{array}$$

3. Father is 46 years old and mother is 24 years old. What is the difference between their ages this year?

爸爸今年 46 歲, 媽媽今年 24 歲, 他們今年相差多少歲?

4. Amy is in a queue buying some food. There are 3 people in front of her and 7 people at her back. How many people are in the line?

艾美正在餐廳排隊買食物, 她前面有 3 人, 而她後面有 7 人。問共有多少人正在排隊?

5. Fill in $+$ or $-$ in the each box to make the equation valid. (Write down the complete equation in the answer sheet)

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。

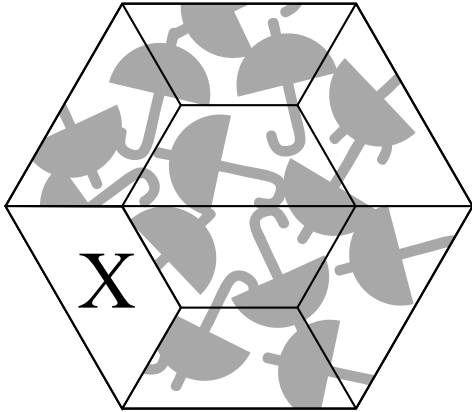
All answers should be written on the ANSWER SHEET.

填上適當符號+或-，令下列算式成立。(在答題紙上寫上完整算式)

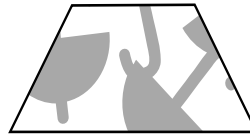
$$2 \square 3 \square 5 = 0$$

6. Which one is the puzzle to fit in position X?

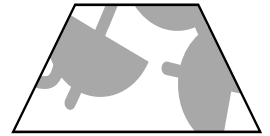
在下面的拼圖中，格子 X 應用哪一塊拼圖？



A



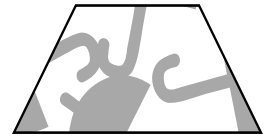
B



C



D



Arithmetic

算術

7. Find the value of $2+4+9+6+8$.

求 $2+4+9+6+8$ 的值。

8. Find the value of $17+7-7$.

求 $17+7-7$ 的值。

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

若 B 為 1 位數字，且以下算式正確，求 B 的值。

$$\square B + 9 = 14$$

10. Find the value of $4+4+4+4+4+4+4+4+4+4$.

求 $4+4+4+4+4+4+4+4+4+4$ 的值。

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

若 C 為 1 位數字，且以下算式正確，求 C 的值。

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.

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$$\boxed{C} - 1 = 6$$

12. Find the value of $18 + 13 + 12$.

求 $18 + 13 + 12$ 的值。

Number Theory

數論

13. Now the light is off. Amy presses the light button 4 times. Can you guess whether the light is on or off?

現時燈是熄的，艾美按燈掣 4 次，請猜猜現時燈是亮或熄的。

14. Fill the lines with ‘+’ and ‘-’ to make the equation below correct. (Write down the complete equation in the answer sheet)

在橫線上填上加號或減號，使下列算式正確。(在答題紙上寫上完整算式)

$$1 \quad \underline{\quad} \quad 1 \quad \underline{\quad} \quad 2 \quad \underline{\quad} \quad 3 \quad = \quad 1$$

15. Fill the lines with ‘+’ and ‘-’ to make the equation below correct. (Write down the complete equation in the answer sheet)

在橫線上填上加號或減號，使下列算式正確。(在答題紙上寫上完整算式)

$$9 \quad \underline{\quad} \quad 8 \quad \underline{\quad} \quad 4 \quad = \quad 5$$

16. How many 1-digit odd number(s) is / are there?

有多少個一位奇數？

17. A pig has 4 legs. A duck has 2 legs. How many heads do 2 pigs and 3 ducks have?

一隻豬有 4 條腿，一隻鴨有 2 條腿；2 隻豬和 3 隻鴨共有多少個頭？

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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All answers should be written on the ANSWER SHEET.

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

按以下規律，橫線上的數字應該是甚麼？

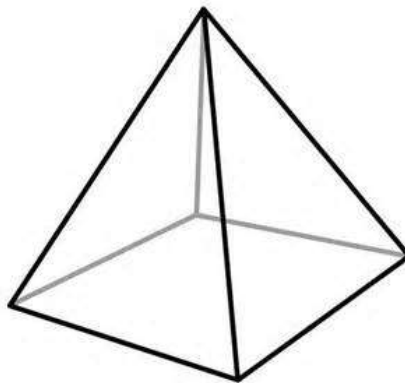
15, 13, 11, 9,

Geometry

幾何

19. Refer to the figure below, how many vertex(s) does this 3-D figure have?

參考附圖，這個立體有多少個頂點？

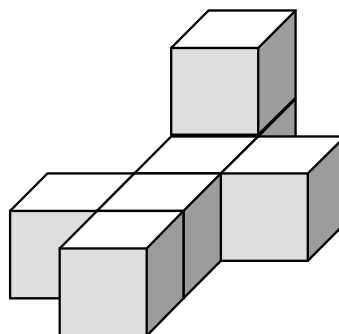


Question 19

第 19 題

20. At least how many cube(s) is / are there in the figure below?

下圖最少由多少個立方體組成？



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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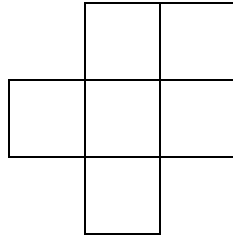
All answers should be written on the ANSWER SHEET.

Question 20

第 20 題

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

請問下圖有多少個正方形？

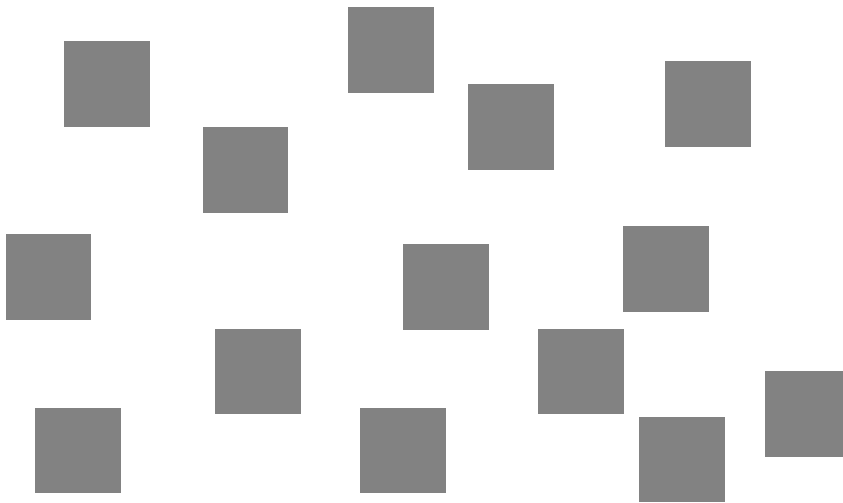


Question 21

第 21 題

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

下圖有多少個正方形？



Question 22

第 22 題

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

按以下規律，橫線上的圖案應該是甚麼？



Question 23

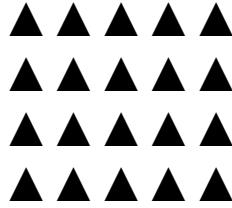
第 23 題

請將答案寫在 答題紙 上。

All answers should be written on the ANSWER SHEET.

24. How many triangle(s) is / are there in the figure below?

下圖有多少個三角形？



Question 24

第 24 題

Combinatorics

組合數學

25. Divide 27 marbles into 3 equal piles. How many marble(s) is / are there in each pile?

將 27 粒波子分成 3 等份，每份有多少粒波子？

26. Which number below is the largest?

下列哪一個數的值最大？

1230 、 2018 、 1228 、 1229

27. According to the following numbers, how many 2-digit number(s) is / are there?

求下列這些數中，有多少個兩位數？

32, 14, 69, 2, 8, 7, 9, 64, 26, 15, 6

28. What is the smallest 3-digit number formed by digits 2, 5 and 1? (Each number can only be used once)

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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利用 2、5、1 三個數字，可組成的最小的三位數是多少？（每個數位只能用一次）

29. According to the following numbers, which odd number is the largest?

求下列這些數中，哪一個是最大的奇數？（奇數即是單數）

123、472、89、9248、125、2589、478

30. What is the smallest 2-digit number?

求最小兩位數的值。

~ 全卷完 ~

~ End of Paper ~

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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