

學生姓名：_____ 班別：_____ 學號：_____ 聯絡電話：_____



香港數學奧林匹克學校
Hong Kong Mathematical Olympiad School

主辦

2025 第三十二屆香港小學數學奧林匹克比賽

- 注意事項：(1). 計算下列各題，用分數作答的必須約至最簡真分數，否則不給予分數。
 (2). 答案必須清楚寫在答案欄內(不用列式)；答案欄外或模糊不清的將不給予分數。
 (3). 全卷共 20 題，每題 1 分，全對才得分。

在下表中寫上 0 至 9，以便老師批改時核對你的字跡。

0	1	2	3	4	5	6	7	8	9

總分：

- $19 + 39 + 59 + 79 + 99 = ?$ 1. _____
- $\frac{2 \times 4 \times 6 \times 8 \times 10}{3 \times 6 \times 9 \times 12 \times 15} = ?$ 2. _____
- $2000 \div 17 + 6000 \div 59 - 283 \div 17 - 41 \div 59 = ?$ 3. _____
- $\frac{1}{1 \times 2} + \frac{5}{2 \times 3} + \frac{11}{3 \times 4} + \frac{19}{4 \times 5} = ?$ 4. _____
- $\frac{1}{\frac{1+1}{\frac{1+1+1}{1+1}}} = ?$ 5. _____
- 規定 $A \# B = A + \frac{1}{B}$ ，計算 $1 \# (2 \# 3)$ 。 6. _____
- 在 1000 與 2000 中的四位數，各數字相乘是 8 的數，有多少個？ 7. _____ 個
- 觀察平方數列 1, 4, 9, 16, ...，當中有兩個平方數，相差為 21。求出所有這些平方數組合中，各數的總和。 8. _____
- 觀察下表，其中 112 是第幾行第幾列？ 9. 第 _____ 行
第 _____ 列

	第 1 列	第 2 列	第 3 列	第 4 列	...
第 1 行	1	4	9	16	...
第 2 行	2	3	8	15	...
第 3 行	5	6	7	14	...
第 4 行	10	11	12	13	...
...

本頁分數：

10. 右方的直式，不同的漢字代表不同的數字，求五位數「美總統大選」。

$$\begin{array}{r}
 \text{美 總 統 大} \\
 \times \quad \quad \quad \text{總 大} \\
 \hline
 \text{6 美 選 大} \\
 \text{總 4 選 0} \\
 \hline
 \text{統 0 8 選 大}
 \end{array}$$

10.

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11. 一個直角三角形，斜邊長度與其中一邊，分別是 10 厘米和 6 厘米。已知其中一條高是 8 厘米，求直角三角形的面積。

11. _____ cm²

12. 三個數的平均數是 29，若果拿走其中一個數，餘下兩數的平均數是 27；若果拿走另一個數，餘下兩數的平均是 31.5。求三數當中最大的數。

12. _____

13. 一些咕牌一面相同，另一面為紅、黃、藍、黑和白色，分別有 2, 3, 4, 5 和 6 張。把咕牌蓋上，相同的面向上，子明最少要抽出多少張牌，才保證有四對同色的牌，每兩對之間不同色？

13. _____ 張

14. 下午二時至六時之間，時鐘上的時針與分針形成直角有多少個？

14. _____ 個

15. 志明的媽媽洗衣服，在一條拉直的繩子上曬襪子 30 隻，她將每對襪子用一個衣夾，夾在繩子上，包括繩子的兩端，相鄰兩個衣夾相距 20 厘米，那麼繩子長多少厘米？

15. _____ 厘米

16. 用 0、5、7、9 組成沒有重複數字四位數，能被 11 整除的有多少個？

16. _____ 個

17. 茶餐廳中，有客人少於 15 位，全都點了炸雞翼或菠蘿油其中至少一款，已知有 7 人點了炸雞翼，10 人點了菠蘿油，那麼同時點了兩款食物的，最少有多少人？

17. _____ 人

18. 一塊長方體形狀的豆腐，被切了三刀，每刀切割的平面，都平行於長方體的其一表面，三次切割中，表面積分別增加了 84cm²，120cm² 和 140cm²。求豆腐的體積。

18. _____ cm³

19. 志明用 23092024 來表示 2024 年 9 月 23 日，他試着把各數字調亂，用來表示這天前後各一百年內的日子，例如 29032042。已知閏年是 4 的倍數，那麼用這些數字，最多可以表示多少個日子？

19. _____ 個

20. 學生被分成甲乙兩組，甲乙兩組人數比為 3:8。後來把一些乙組的學生調去甲組，甲乙兩組人數比變成 5:7。已知總人數多於 200，那麼學生最少共有多少人？

20. _____ 人

本頁分數：

Name: _____ Class: _____ Student No.: _____ Phone No.: _____



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2025 The 32nd Hong Kong Primary Mathematical Olympiad

Remarks:

- (1). 1 mark for each question, total 20 marks. Each mark is only given to exactly right answer.
- (2). Write the answers in the space provided, otherwise the answer will not be marked.
- (3). Calculate the following questions. Answers expressed in fraction should be expressed in simplest form, otherwise will not be marked.

Write down 0 to 9 in the following table, to help the marker know your handwriting.

0	1	2	3	4	5	6	7	8	9

Marks:

1. $19 + 39 + 59 + 79 + 99 = ?$ 1. _____
2. $\frac{2 \times 4 \times 6 \times 8 \times 10}{3 \times 6 \times 9 \times 12 \times 15} = ?$ 2. _____
3. $2000 \div 17 + 6000 \div 59 - 283 \div 17 - 41 \div 59 = ?$ 3. _____
4. $\frac{1}{1 \times 2} + \frac{5}{2 \times 3} + \frac{11}{3 \times 4} + \frac{19}{4 \times 5} = ?$ 4. _____
5.
$$\frac{\frac{1}{\frac{1+1}{\frac{1+1+1}{\frac{1+1}{1}}}}}{1} = ?$$
 5. _____
6. Define $A \# B = A + \frac{1}{B}$. Calculate $1 \# (2 \# 3)$. 6. _____
7. How many 4-digit numbers between 1000 and 2000 such that the product of its individual digit is equal to 8? 7. _____
8. Observe the sequence of square numbers 1, 4, 9, 16, There are two square numbers such that their difference is 21. Find the sum of all those square numbers. 8. _____
9. Observe the right table. Among them, 112 is in which row and column? 9. _____

	1 Column	2 Column	3 Column	4 Column	...
1 Row	1	4	9	16	...
2 Row	2	3	8	15	...
3 Row	5	6	7	14	...
4 Row	10	11	12	13	...
...

Row: _____
Column: _____

10. In the right column form, different letters represent different digits. Find the 5-digit number ABCDE.
- | | | | | | |
|---|---|---|---|---|--|
| | A | B | C | D | |
| × | | | B | D | |
| | 6 | A | E | D | |
| B | 4 | E | 0 | | |
| C | 0 | 8 | E | D | |
11. In a right triangle, the length of the hypotenuse and one of the sides are 10cm and 6cm respectively. It is known that one of the heights is 8cm. Find the area of this right triangle.
12. The average of the three numbers is 29. If one of the numbers is taken away, the average of the two remaining numbers is 27. If another number is taken away, the average of the two remaining number is 31.5. Find the largest number among three numbers.
13. The numbers of cards which are identical on one side and the other side are red, yellow, blue, black and white are 2, 3, 4, 5 and 6 respectively. Cover the cards with the same sides facing up, what is the minimum number of cards Edward needs to draw in order to guarantee that there will be four pairs of cards of the same color and there are different colors between each pair?
14. Between 2pm and 6pm, how many right angles are there between the hour and minute hands on a clock?
15. Henry's mother is doing the laundry. She puts 30 socks on a straightened rope. She uses one clothes peg for each pair of socks to clamp on the rope. Including both ends of the rope, there is 20cm between any two adjacent clothes pegs. What is the length of the rope?
16. Using 4 non-repeatable digits, 0, 5, 7, 9 to form a four-digit number, how many of them can be divisible by 11?
17. There are less than 15 customers in a tea restaurant. Between fired chicken wing and pineapple bun, all customers have ordered at least one of them. It is known that 7 customers have ordered fired chicken wing and 10 customers have ordered pineapple bun. What is the least number of customers order both of them?
18. A bean curd in a rectangular shape is cut 3 times. The plane created by each cut is parallel to one of the surfaces of the rectangular shape. During these 3 cuts, the total surface area is increased by 84cm, 120 cm and 140cm respectively. Find the volume of the bean curd.
19. Jeff uses 23092024 to represent the date of September 23, 2024. He tries to shuffle these 8 digits to represent other dates within one hundred years before and after. For example, 29032042. It is known that leap year is a multiple of 4. At most how many dates can be represented by using these 8 digits?
20. Students are divided into two groups, A & B. The ratio of people between A & B is 3 : 8. A certain number of students are moved from B to A and then the ratio of people between A & B is changed to 5 : 7. It is given that the total number of students is more than 200. What is the least total number of students?

10.

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11. _____ cm²

12. _____

13. _____

14. _____

15. _____ cm

16. _____

17. _____

18. _____ cm³

19. _____

20. _____

~ End of paper ~