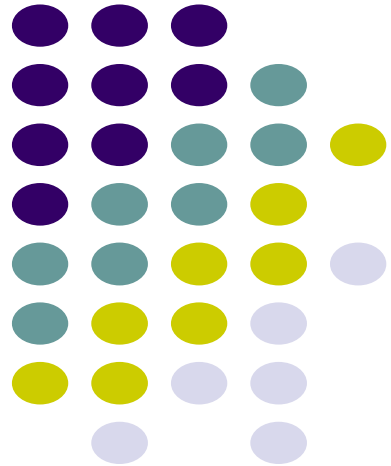
香港数学竞赛

郑仕文

2025年11月12日



第四十三届香港数学竞赛 (HKMO)（2025/26）

截止报名日期：9 / 1 / 2026

初赛比赛日期：24 / 1 / 2026

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香港数学竞赛

香港数学竞赛是由教育局数学教育组及香港教育大学(前称香港教育学院)数学与资讯科技学系联合举办。比赛旨在发展学生的数学能力和培养他们对数学的兴趣。

第 43 届香港数学竞赛 (2025/26)

- 学校通告及比赛规则 PDF
- 参赛表格 网上表格
- 筹备委员会委员名单 PDF

香港数学竞赛规则

- 初赛 – 个人项目
- 初赛 – 团体项目(I) (25 分)
- **初赛 – 团体项目(II) (10 分)**
- 晋级 – 个人项目 (80 分) + 团体项目 (35 分)

初赛 — 个人项目

- 解答15条问题
  - 甲部占10题
  - 乙部占5题
- 甲部的每一正确答案可得1分
- 乙部的每一正确答案可得2分
- 每人可得之最高积分为20分
- 每队可得之最高积分为80分

初赛 — 团体项目 (I)

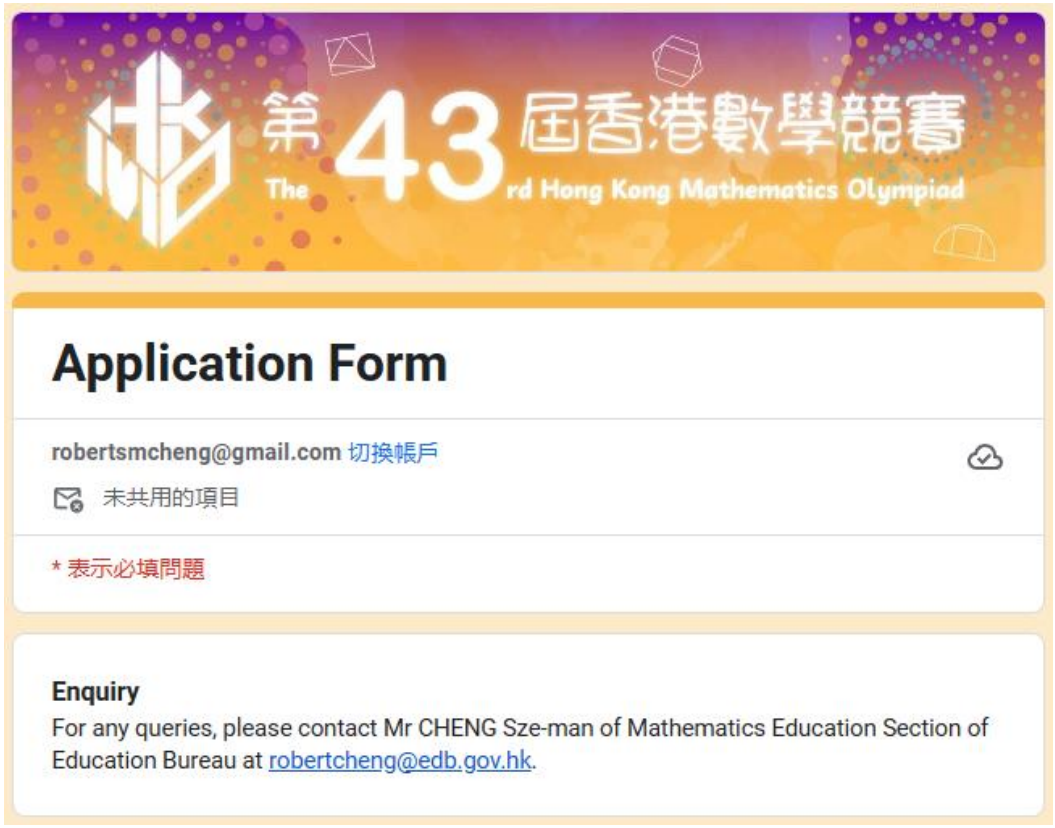
- 解答10条问题
  - 甲部占 5 题
  - 乙部占 5 题
- 甲部的每一正确答案可得 2 分
- 乙部的每一正确答案可得 3 分
- 每队可得之最高积分为 25 分

初赛 — 团体项目 (II)

- 解答2条问题，每一题可得5分
- 包含数学建模元素
- 每队可得之最高积分为 10 分

报名程序

Google Form: https://forms.gle/3QFB3ZC5PE87x4hb9



报名程序

- 新增：个人私隐条例声明

Personal Data Collection Statement

Purpose of Collection

1. The personal data provided by you in this form will be used by the EDB for one or more of the following purposes:

(a) Activities relating to the processing, authentication and counter-checking of the **enrollment for the event**;

(b) Activities relating to **matching of the personal data** with the database of other relevant Government bureaux / departments in connection with the processing, authentication and counter-checking of the enrollment mentioned in (a) above;

(c) Activities relating to **matching of the personal data** within the database of EDB for purposes of verifying / updating records of the EDB;

(d) Activities relating to **training and development** including processing the CPD hours as needed;

(e) Activities relating to compilation of **statistics**, **research** and **Government publications**; and

(f) Activities relating to the **administration and enforcement of rules and regulations** including the Education Ordinance (Cap. 279), its subsidiary legislation (such as the Education Regulations and the Grant/Subsidized Schools Provident Fund Rules) and the Codes of Aid.

报名程序

- 新增：个人私隐条例声明

2. The provision of personal data required by this form and during the processing of this form is obligatory. In the event that you do not provide those personal data, we may not be able to handle or further process the enrollment.

Classes of Transferees

3. The personal data you provide will be made available to persons working in EDB. Apart from this, they may be transferred or disclosed to the parties or in the circumstances listed below:

(a) Other Government bureaux and departments for the purposes mentioned in paragraph 1 above;

(b) The school in which the form relates for the purposes mentioned in paragraph 1 above;

(c) Personnel, agent, service provider or organizations, including the event organisor, engaged by EDB to provide services or advice for purposes mentioned in paragraph 1 above;

(d) Where you have given your prescribed consent to such disclosure; and

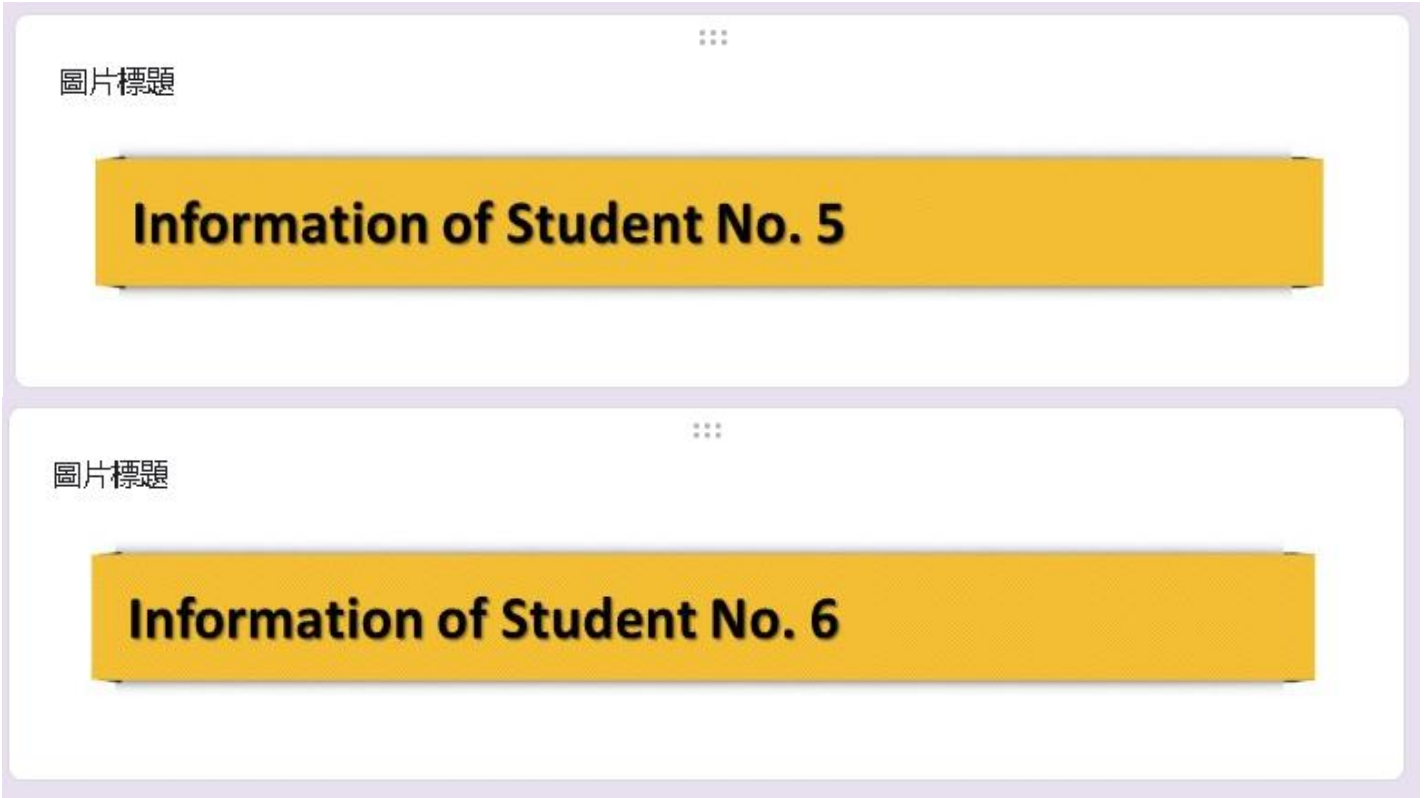
(e) Where such disclosure is authorised or required under the law or court order applicable to Hong Kong.

Access to Personal Data

You have the right to request access to and correction of your personal data held by EDB. Request for access or correction of personal data should be made in writing to Senior Curriculum Development Officer (Mathematics)1, Mathematics Education Section, 4/F., Kowloon Government Offices, 405 Nathan Road, Yau Ma Tei, Kowloon.

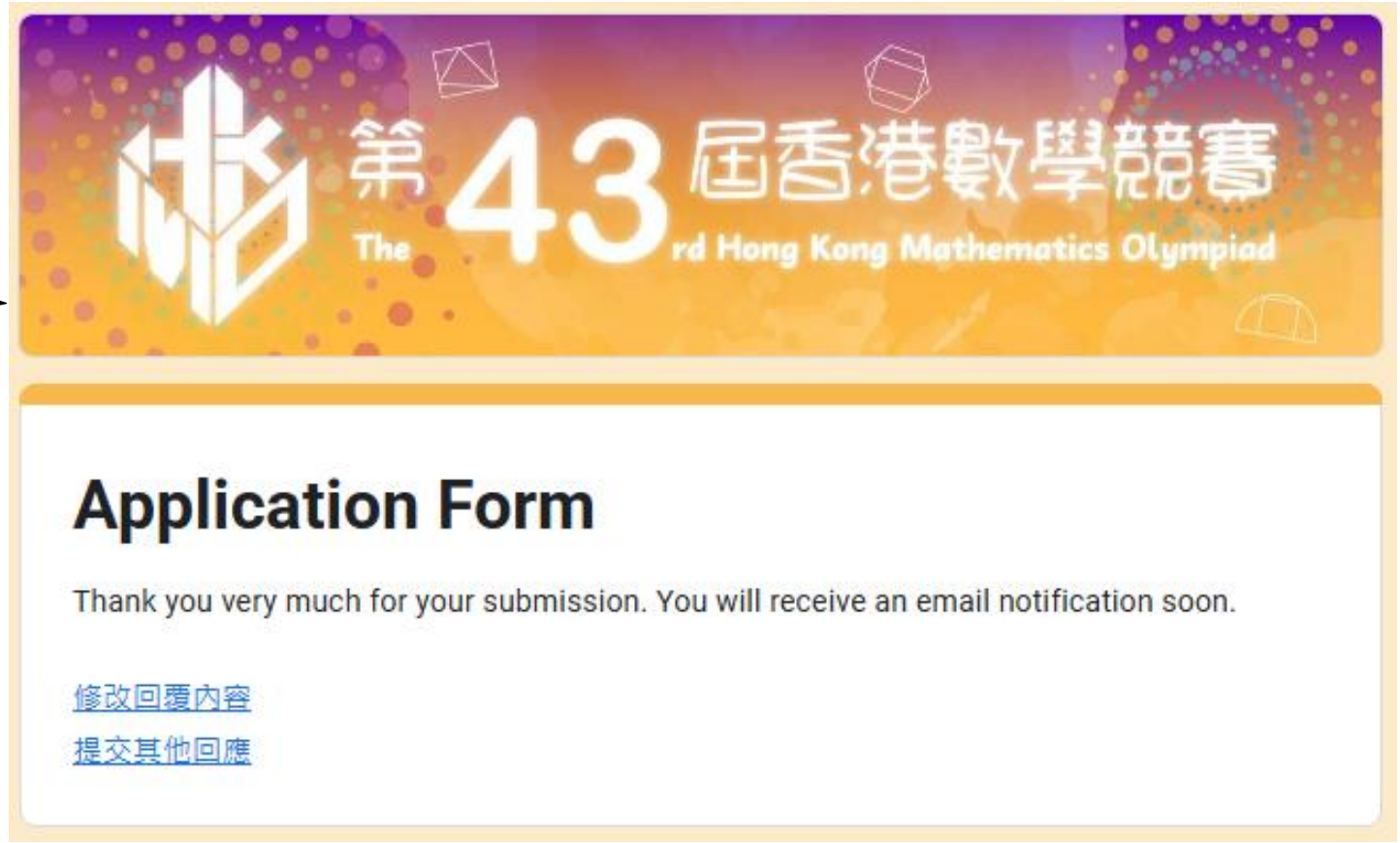
报名程序

- 填写所有必填（有*）项目
- 如只有4位参赛同学，不用填任何关于第5及第6位同学的资料



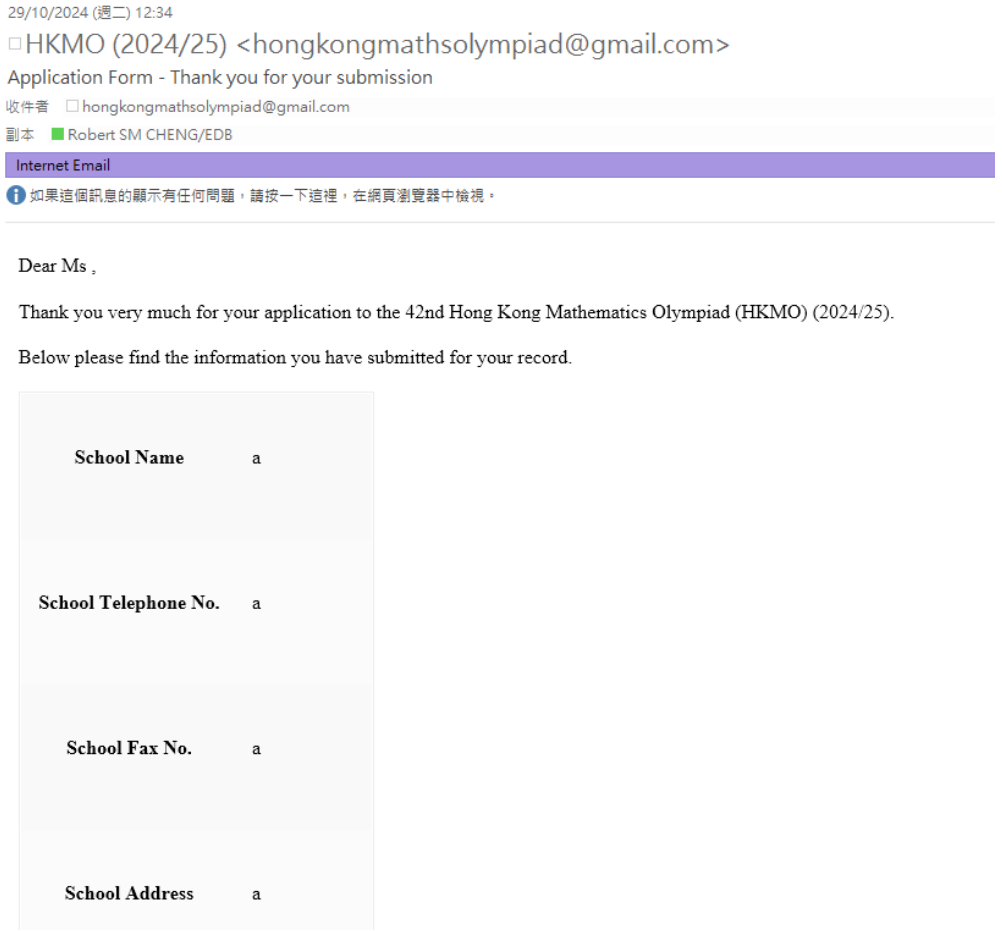
报名程序

- 完成后**请按「提交」键**
- 你会见到此画面
- 你可以修改已提交的内容



报名程序

- 你亦会收到电邮通知已提交的资料
- 必须复核你提交的数据是否正确
- 不要删除此邮件，因为.....



29/10/2024 (週二) 12:34

HKMO (2024/25) <hongkongmathsolympiad@gmail.com>

Application Form - Thank you for your submission

收件者 hongkongmathsolympiad@gmail.com

副本 Robert SM CHENG/EDB

Internet Email

如果這個訊息的顯示有任何問題，請按一下這裡，在網頁瀏覽器中檢視。

Dear Ms ,

Thank you very much for your application to the 42nd Hong Kong Mathematics Olympiad (HKMO) (2024/25).

Below please find the information you have submitted for your record.

School Name	a
School Telephone No.	a
School Fax No.	a
School Address	a

报名程序

- 在邮件最尾部分你会**见到一条hyperlink**，在截止报名前的任何时间，你都可以点击这个连结找回你已提交的申请表，作出修改

You may click the link to edit the original form: https://docs.google.com/forms/d/e/1FAIpQLSeSYftqg0XAOdNR308wGipL3zeMoGAeHrS1gY1rtaubJuY2aw/viewform?edit2=2_ABaOnufhe_GnEhF18enwlkGUni4s2eguKhdZw23Zt_qkQUahzSExLFIwO-U2RNAJGrNQ8hA

For any queries, please feel free to contact me at 2153 7436 or robertcheng@edb.gov.hk.

- 截止日期：2026年1月9日（星期五）
- 初赛比赛日期：2026年1月24日（星期六）

新安排

- 所有跟比赛相关信息将以email 通知
- 领队教师必须提供有效的email地址，并须定期查看邮箱

Dear [teacher-in-charge],

On behalf of the Organising Committee, I would like to thank you for your keen interest in the Hong Kong Mathematics Olympiad (HKMO).

The Heats of the competition will be held on **24 January 2026 (Saturday)** from 8:45 a.m. to 12:00 noon. Your school ID is **HKI-01** and your school has been allocated to **Hong Kong Island Region (HKI)** centre. The centre address is

The True Light School of Hong Kong,
50 Tai Hang Road, Hong Kong.

Please note that question papers for past HKMO Heats and Finals have been uploaded onto the web site of the Mathematics Education Section for your reference. The relevant web page is https://www.edb.gov.hk/en/curriculum-development/kla/ma/res/sa/hkmo-index.html.

新安排

- 学生编号
- 8位数 43xxxxxx
- 后缀6位数字是随机编配，不是顺序递升或递减

Student participants:

No.	Name		Student ID
	English	中文姓名	學生編號

新安排

- **必须**列印 Student ID slip
- 赛前**让每位参赛**学生取得自己的ID slip

The 43rd HKMO (2025/26) Student ID Slip

School:	
School ID:	
Student Name (E):	
Student Name (C):	
Student ID:	

School:	
School ID:	
Student Name (E):	
Student Name (C):	
Student ID:	

School:	
School ID:	
Student Name (E):	
Student Name (C):	
Student ID:	

School:	
School ID:	
Student Name (E):	
Student Name (C):	
Student ID:	

新安排

- 所有考卷**只可写上学生编号**
- 任何考卷如发现学生姓名，**一律不予评分**

43rd Hong Kong Mathematics Olympiad (2025/26)
Heats – Individual Event
Answer Sheet

School : _____

School ID : _____

Student ID : _____

Seat Number : _____

43rd Hong Kong Mathematics Olympiad (2025/26)
Heats – Group Event (I)
Answer Sheet

School : _____

School ID : _____

Student ID : (1) _____ (2) _____

(3) _____ (4) _____

新安排

- 所有考卷只可写上学生编号
- 任何考卷如发现学生姓名，**一律不予评分**
- 学生编号是随机编配，并非顺序，切勿乱填，否则**不予评分**

43rd Hong Kong Mathematics Olympiad (2025/26)
Heats – Individual Event
Answer Sheet

School : _____

School ID : _____

Student ID : _____

Seat Number : _____

43rd Hong Kong Mathematics Olympiad (2025/26)
Heats – Group Event (I)
Answer Sheet

School : _____

School ID : _____

Student ID : (1) _____ (2) _____

(3) _____ (4) _____

初赛 [团体项目 (II)]

1. The price of a printer ink cartridge at Tech World is $250 each. If a customer buys a minimum of 5 cartridges, a discount of $150 is applied to the entire purchase.

   a) Write a function, f(x) , that models the total cost of buying x cartridges at Tech World.

   b) Find the total cost of buying 8 cartridges at Tech World.

初赛 [团体项目 (II)

The price of the same cartridge at Office Plus is \$220 each. A customer must buy a minimum of 5 cartridges. The total cost at Office Plus is cheaper than Tech World when $x > k$.

c) Find the minimum value of k .

初赛 [团体项目 (II)

1. The price of a printer ink cartridge at Tech World is \$250 each. If a customer buys a minimum of 5 cartridges, a discount of \$150 is applied to the entire purchase.

   a) Write a function, f(x) , that models the total cost of buying x cartridges at Tech World.

$$f(x)=\begin{cases}250x & \text{if } x<5\\ 250x-150 & \text{if } x\geq 5\end{cases}$$

   b) Find the total cost of buying 8 cartridges at Tech World.

$$f(8)=250(8)-150=1850$$

初赛 [团体项目 (II)

The price of the same cartridge at Office Plus is \$220 each. A customer must buy a minimum of 5 cartridges. The total cost at Office Plus is cheaper than Tech World when $x > k$.

c) Find the minimum value of k.

Define the cost function for Office Plus, g(x)

For $x \geq 5$, $g(x) = 220x$

For $x > k$, $g(x) < f(x)$

$$220x < 250x - 150$$

$$x > 5$$

The minimum value of k is 6.

初赛 [团体项目 (II)]

2. A marine biologist introduces 50 of a new species of crab to a secluded, rocky shore ecosystem. The population size, C , is monitored and its growth can be approximately modelled by the differential equation, $\frac{\mathrm{d}C}{\mathrm{d}t} = 0.5C$, where t is time measured in years.

Write down 5 key assumptions of this mathematical model.

初赛 [团体项目 (II)]

The model $\frac{\mathrm{d}C}{\mathrm{d}t} = 0.5C$ represents exponential growth. Its key assumptions are:

1. Constant Growth Rate〔恒定成长率〕: The per capita growth rate (0.5 per year) is constant. This implies that the birth and death rates are stable over time and are not affected by the population's density or age structure.

2. Continuous Growth and Reproduction〔持续生长和繁殖〕: The model assumes that reproduction happens continuously throughout the year, not in specific breeding seasons.

3. Closed System〔封闭系统〕: There is no immigration of new crabs into the area or emigration of the existing crabs out of the rocky shore.

初赛 [团体项目 (II)]

4. No Predators or Diseases〔无掠食者，无疾病〕: The ecosystem is assumed to have no natural predators (e.g., birds, fish), parasites, or diseases that could cause mortality in the crab population.

5. Unlimited Resources〔无限资源〕: The rocky shore provides an endless supply of food (e.g., algae, detritus), shelter, and space for the crabs, with no competition for these resources.

6. No Time Delay〔无时间延迟〕: It ignores delays such as the time it takes for a crab to mature to reproductive age.

7. Homogeneous Population〔同质人口〕: All crabs are considered identical in terms of their reproductive potential and survival rate; age, sex, and genetic differences are not accounted for.

HKMO

Hong Kong Mathematics Olympiad Past Paper (Volume 1)

香港數學競賽
歷屆比賽題目（第一輯）

1983-1997

HKMO

Hong Kong Mathematics Olympiad Past Paper (Volume 2)

香港數學競賽
歷屆比賽題目（第二輯）

1997-2008

HKMO

Hong Kong Mathematics Olympiad Past Paper (Volume 3)

香港數學競賽
歷屆比賽題目（第三輯）

2008-2022

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https://drive.google.com/drive/folders/1aVvKhNkI8EvB3geOGX212kGnBXGe8ceQ?usp=sharing

第四十三届香港数学竞赛 (HKMO)（2025/26）

截止报名日期：9 / 1 / 2026

初赛比赛日期：24 / 1 / 2026

https://forms.gle/3QFB3ZC5PE87x4hb9

謝謝

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