



E1IM0008C

(Token- required)

Intermediate Course in  
Mathematical Olympiad

# Introduction to Olympiad Mathematics 2022 (Phase I)

Dr Ching Tak Wing and other trainers

INTRODUCTION TO  
OLYMPIAD  
MATHEMATICS

PHASE I



**Application Deadline**  
**31 Jan 2022 12:00 n.n**

**Result Release**  
**25 Feb 2022**

## **Intended Learning Outcomes**

Upon completion of the programme, participants should be able to:

1. broaden mathematical knowledge in a variety of areas on the basis of senior secondary mathematics curriculum
2. strengthen the problem solving and higher-order thinking skills
3. learn more about the scope of International Mathematical Olympiad Training



## ◆ Introduction

- An introductory level comprehensive mathematics programme which covers a wide range of topics
- Broaden students' mathematical knowledge and strengthen their problem-solving skills
- Students can learn more about the scope of International Mathematical Olympiad Training
- Consists of 2 phases

This programme is co-organized with International Mathematical Olympiad Hong Kong Committee (IMOHKC)

## ◆ Target Participants

- S1 to S6 HKAGE student members
- Class size: 30

All applicants **MUST** attend the **Aptitude Test** held on **19 Feb 2022**.

Except for those who have

- a) completed any 2 out of 5 courses in Maths Ignition series **OR**
- b) attended the Aptitude Test held on 15 May 2021, 21 Aug 2021 or 20 Nov 2021

**Remarks: Not for student members who have completed any phase of "International Mathematics Olympiad Training" or "Introduction to Olympiad Mathematics" before**

Remarks:

- Due to the limited seats in computer rooms, students who have attended the Aptitude Test on 20 Nov 2021 would not be allowed to take the test on 19 Feb 2022. Their results on 20 Nov 2021 will be used for this programme.
- Students will be selected randomly in attending the Aptitude Test if the application is over-subscribed. Only selected students could join the Aptitude Test held on 19 Feb 2022.
- A notification email will be sent on **9 Feb 2022** for the application result of the Aptitude Test.
- All unselected students will be regarded as their application of this programme unsuccessful.

This programme is the same as Introduction to Olympiad Mathematics 2020 (Phase I) (MATS1151) in 19/20 school year.

## ◆ Medium of Instruction

Cantonese with English handouts

## ◆ Pre-requisite

Students should know the basic knowledge of the following:

Quadratic Equations and Functions, Binomial Theorem, Mathematical Induction, Remainder Theorem and Factor Theorem, Arithmetic and Geometric Sequences, Circles and Trigonometry



## ◆ Aptitude Test

- Students who wish to apply for this programme must take a general aptitude test on **19 Feb 2022 (2:00 p.m. – 4:00 p.m.)**. Except for those who have attended the Aptitude Test held on 15 May 2021, 21 Aug 2021 or 20 Nov 2021.
- This general aptitude test consists of 100 multiple choice questions which covers a wide range of topics in mathematics. The purpose of the test is to figure out the applicant's knowledge in different fields of mathematics in order to choose the most suitable students for different programmes. Neither under-qualified nor over-qualified students will be admitted.
- The next aptitude test is tentatively scheduled on **14 May 2022**. The result of an aptitude test will be valid for one year. If a student takes the test more than once, the latest result will prevail. The following table lists the programmes for which the results of this general aptitude test will apply.

Programme Date	Code	Programme Name	Aptitude test valid			
			15 May 2021	21 Aug 2021	20 Nov 2021	19 Feb 2022
Mar 2022	E1IM0007C	CGMO Training 2022 (Phase I)	✓	✓	✓	✓
Mar 2022	E1IM0008C	Introduction to Olympiad Mathematics 2022 (Phase I)	✓	✓	✓	✓
Jul 2022	E1IM0001C	Maths Ignition - Combinatorics		✓	✓	✓
Aug 2022	E1IM0002C	Maths Ignition - Geometry		✓	✓	✓
Sep 2022	E1IM0003C	Maths Ignition - Number Theory			✓	✓
Nov 2022	E1IM0004C	Maths Ignition - Algebra			✓	✓

### Remarks:

1. All aptitude tests will only be arranged on the designated dates. No make-up test will be arranged.
2. No Calculator is allowed.
3. Please bring along with your Identification Card, e.g. HKID, student ID.
4. Please arrive at the venue 15 minutes prior to the Aptitude Test begins.

**If students who have selected to join the aptitude test are absent without any reasons and prior notification provided, it will result in a lower priority in joining the aptitude test next time when they apply.**

## ◆ Certificate

E-Certificate will be awarded to participants who have:

- attended **at least 7 sessions**; and
- completed all the assignments with satisfactory performance



## ◆ Schedule

Session	Date	Time	Venue	
Aptitude Test <b>Interview</b>	19 Feb 2022	2:00 p.m. – 4:00 p.m. <b>1:00 p.m. - 6:00 p.m.</b>	Welkin Systems Limited, 7/F, Righteous Centre, 585 Nathan Road, Mongkok ( <a href="#">MAP</a> ) <b>Zoom Meeting</b>	
1	5 Mar	2:00 p.m. – 5:30 p.m.	Room 105, HKAGE Zoom Meeting	
2	12 Mar		Room 303, HKAGE Zoom Meeting	
3	19 Mar			
4	26 Mar			
5	2 Apr			
6	9 Apr			
7	<b>23 Apr</b>			Room 303, HKAGE <b>Zoom Meeting</b>
8	<b>30 Apr</b>			
9	7 May			Room 105, HKAGE

- For any assessment to be held in the programme, **no make-up** will be arranged.
- **The aptitude test will be changed to online interview. Applicants will receive an email about the arrangement of further screening on or before 9 Feb 2022 (Wed). Some of the applicants might be invited to attend the online interview to be held on 19 Feb. Applicants who are being invited will receive the email on or before 16 Feb (Wed).**

## ◆ Sample Notes

1. Does there exist a multiple of 2017 of the form  $111\dots111$ ?
2. If  $a + b + c = 10$ , what is the greatest possible value of  $ab^2c^3$ ?