



# MATHS IGNITION – NUMBER THEORY

(E1IMO003C)

<b>Introduction</b>	<p>Maths Ignition is an introductory programme. It is designed as a series of courses on different topics and is developed as a bridging programme to the 'IMO Training' programme.</p> <p>'Maths Ignition - Number Theory' is the third course of the series. It aims to broaden students' knowledge in number theory on the basis of junior secondary mathematics curriculum through exploration and investigation approach. Students who have completed 2 out of 5 courses in Maths Ignition series might be considered for direct admission to the 'Introduction to Olympiad Mathematics 2022 (Phase I) (E1IMO008C), an intermediate-level programme offered by IMO Hong Kong Committee.</p> <p>This programme is co-organized with International Mathematical Olympiad Hong Kong Committee (IMOHKC)</p>
<b>Programme Type / Level</b>	Introductory Course in Mathematical Olympiad ( <a href="#">Token-required</a> )
<b>Instructor(s)</b>	Dr Law Ka Ho
<b>Pre-requisites</b>	<p>Students should have the basic knowledge in</p> <ol style="list-style-type: none"><li>1. Prime factorisation of positive integers;</li><li>2. Basic properties of and tests for the divisibility of integers.</li></ol>
<b>Target Participants</b>	<p>➤ S1 – S3 HKAGE student members ➤ Class size: 30</p> <p>All applicants <b>MUST</b> attend the <b>Aptitude Test</b> held on <b>21 Aug 2021</b> except for those who have attended the Aptitude Test held on 21 Nov 2020, 20 Feb 2021 or 15 May 2021.</p> <p><b>Not for students who have enrolled in any phase of:</b></p> <ol style="list-style-type: none"><li><b>1. CGMO Training or</b></li><li><b>2. Introduction to Olympiad Mathematics or</b></li><li><b>3. International Mathematics Olympiad (IMO) Training before.</b></li></ol> <p>Remarks:</p> <ul style="list-style-type: none"><li>• Due to the limited seats in computer rooms, students who have attended the Aptitude Test on 15 May 2021 would not be allowed to take the test on 21 Aug 2021. Their results on 15 May 2021 will be used for this programme.</li><li>• 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 21 Aug 2021.</li><li>• A notification email will be sent on <b>11 Aug 2021</b> for the application result of the Aptitude Test.</li><li>• All unselected students will be regarded as their application of this programme unsuccessful.</li></ul> <p>This programme is same as "Introductory Course in Mathematical Olympiad- Maths Ignition - number theory (MATS1113)" in 19/20 school year.</p>

<b>Medium of Instruction</b>	Cantonese with English handouts					
<b>Certificate</b>	<b>E-Certificate</b> will be awarded to participants who have: <ul style="list-style-type: none"> <li>❖ Attended <b>at least 3 sessions AND</b></li> <li>❖ Satisfactory performance in the end-of-course test.</li> </ul>					
<b>Intended Learning Outcomes</b>	Upon completion of the programme, participants should be able to: <ol style="list-style-type: none"> <li>1. broaden their mathematical knowledge in the topic of number theory on the basis of junior secondary mathematics curriculum;</li> <li>2. strengthen their problem solving and higher-order thinking skills;</li> <li>3. learn more about the scope of International Mathematical Olympiad Training.</li> </ol>					
<b>Aptitude Test</b>	<p>Students who wish to apply for this programme must take a general aptitude test on <b>21 Aug 2021 (1:45 p.m. – 3:45 p.m. or 4:00 p.m. – 6:00 p.m.)</b>.</p> <p>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.</p> <p>The next aptitude test is scheduled on <b>20 Nov 2021</b>. The result of an aptitude test will be valid for 1 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:</p>					
			Aptitude test valid			
			<b>21 Nov 2020</b>	<b>20 Feb 2021</b>	<b>15 May 2021</b>	<b>21 Aug 2021</b>
Sep 2021	E1IMO003C	Maths Ignition - Number Theory	√	√	√	√
Nov 2021	E1IMO004C	Maths Ignition - Algebra	√	√	√	√
Feb 2022	E1IMO005C	Maths Ignition - Coordinate Geometry		√	√	√
Mar 2022	E1IMO007C	CGMO Training 2022 (Phase I)			√	√
Mar 2022	E1IMO008C	Introduction to Olympiad Mathematics 2022 (Phase I)			√	√
Jul 2022	E1IMO001C	Maths Ignition - Combinatorics				√
Aug 2022	E1IMO002C	Maths Ignition - Geometry				√
<b>Remarks:</b>						
<ol style="list-style-type: none"> <li>1. <b>All aptitude tests will only be arranged on the designated dates. No make-up test will be arranged.</b></li> <li>2. <b>No Calculator is allowed.</b></li> <li>3. <b>Please bring along with your Identification Card, e.g. HKID, student ID.</b></li> <li>4. <b>Please arrive at the venue 15 minutes prior to the Aptitude Test begins.</b></li> </ol>						
<p><b>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.</b></p>						

Application **9 Aug 2021**

Application Result

Deadline **12:00 n.n.**

Release Date

**30 Aug 2021**

If student members withdraw from the programme after the Application Deadline, the token will be deducted.

### Schedule

Session	Date	Time	Venue
<b>Aptitude Test</b>	<b>21 Aug 2021</b>	<b>1:45 p.m. – 3:45 p.m.</b> or <b>4:00 p.m. – 6:00 p.m.</b>	<b>*Welkin Systems Limited (Mongkok)</b>
1	4 Sep	2:00 p.m. – 5:00 p.m.	HKAGE Room 206 <b>Room 203</b>
2	11 Sep		
3	18 Sep		
4	25 Sep		HKAGE Room 206 <b>Room 105</b>

[\\*Address: 7/F, Righteous Centre, 585 Nathan Road, Mongkok, Kowloon \(Opposite to Sino Centre\)](#)

#### Remarks:

**For any assessment to be held in the programme, no make-up will be arranged.**

### Sample

Examples for  
the Programme

1. What is the sum of all factors of 899899?
2. Find all positive integers  $x$  and  $y$  such that  $xy = 4x + 7y$ .

### Enquiries

For enquiries, please contact us on 3940 0101 after language selection, press "1".