



Mathematics Competitions 2023

Updated on Jan 2023

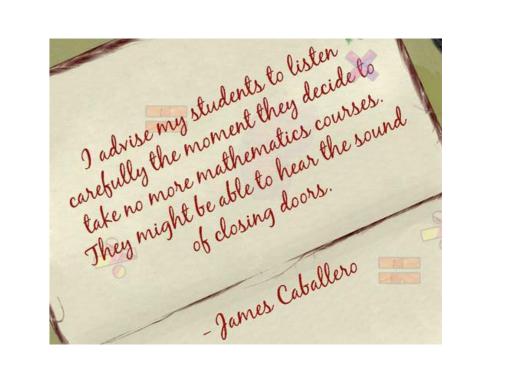
"I still remember the realization in college at Flinders University in Australia that mathematics was not just an abstract game of symbols but could be used as a tool to analyze and understand the modern world."

"I don't have any magical ability. I look at a problem, play with it, work out a strategy."

"Talent is important, but how one develops and nurtures it is even more so."

"You want to get to the top of the cliff. But that's not what you focus on immediately. You focus on the next ledge just beyond your reach, because you need to do one clever thing to get up there. And then, once you get there, you do it again. A lot of this is rather boring and not very glamorous. But you can't jump cliffs in a single bound."

- By Terence Tao



General FAQs: Contact hongleekiat@acsindep.edu.sg (Mr Hong Lee Kiat) if any queries.

Registrations: Do keep a lookout for announcements on when and where to register for different math competitions.

Trainings: Usually on Monday and Tuesday, starting from 30th Jan. See https://goo.gl/XQR3mx

Compulsory for members and those keen to join.

Alpha Training (Years 1-3): Monday & Tuesday in Math Lab, 3:00pm – 4:30pm
 Omega Training (Years 4-6): Monday & Tuesday in Math Lab, 4:30pm – 6:30pm

Important Disclaimer:

Dates and prices may be subjected to changes by external organisers. Competitions are held within school, unless otherwise stated. Registered participants will be updated on any changes via school account emails.

Name	Date	Information	Difficulty	Fee	Suitable Levels
Singapore Mathematics Project Festival (SMPF)	Jan (Held in external venues)	The Singapore Mathematics Project Festival (SMPF) is the national competition for Mathematical projects at secondary school level, which was inaugurated by the Singapore Mathematical Society in 2001 in recognition of the fact that creative and innovative work in mathematics may best be reflected in project work wherein ideas may be thoroughly explored and carried through from start to finish. More information can be found from the official website .	***	S\$50	Y2/Y3/Y4/Y5 Members ONLY. Registration is closed. Interested students can register in Nov for next year's SMPF.
British Mathematics Olympiad Round 2 (BMO2)	End Jan (Date and prices may vary)	British Mathematics Olympiad (BMO2) is the third stage of the national competition of United Kingdom, which is organized by United Kingdom Mathematics Trust and British Mathematical Olympiad Subtrust. BMO2 is a 3.5-hour paper with 4 problems, taken by students in their own schools. Based on performances in BMO1, up to 100 students (who are eligible to represent the UK at the IMO) are invited to sit BMO2, with selection taking account of age and other factors; others who entered BMO1 may enter on payment of the entry fee. Marking is carried out by around ten people, under the direction of the current IMO Team Leader. The top 25% of scorers in BMO2 receive a Certificate of Distinction. Of the remaining candidates, those who qualify automatically to sit the paper receive a Certificate of Qualification. Discretionary (paid-for) candidates are only eligible for Distinction certificates. More information can be found from the official website.	****	S\$50	By invitations only. (only top performing students from BMO1 and SMO in previous year are selected to take part)
United Kingdom Intermediate Mathematics Challenge (UKIMC)	2 Feb (Date may vary. To be determined by Organisers)	The United Kingdom Intermediate Mathematics Challenge (UKIMC) is the national level competition of United Kingdom aimed at pupils in Secondary 4 or below, which is organized by the United Kingdom Mathematics Trust and supported by the Institute and Faculty of Actuaries. The challenge involves answering 25 multiple choice questions in one hour and is sat in school under normal exam conditions. The top 40% of students nationally receive a gold, silver or bronze certificate in the ratio 1:2:3 and each institution receives a Best in School certificate. Around 500 of the highest scorers in each school year are invited to take part in the Intermediate Mathematical Olympiad papers: Cayley, Hamilton and Maclaurin for year 9, 10 and 11 and equivalent. A further 5,500 pupils from across all three year groups are invited to sit either the grey or pink European Kangaroo papers. These are one-hour papers with 25 multiple choice questions, taken by pupils from over 30 countries worldwide. Top students in UKIMC will be invited to compete in the IMOK. More information can be found from the official website.	*	S\$4.50	Recommended for newcomers and those interested to join Math Competition Team this year.

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INTERNATIONAL MATHEMATICAL MODELLING CHALLENGE (IMMC) Singapore and International Rounds.	13 Mar – 17 Mar (Note that this is during March Term Break.)	IM²C (International Mathematical Modelling Challenge) is an international competition on mathematical modelling. The purpose of the IM2C is to promote the teaching of mathematical modelling and applications at all educational levels for all students. It is based on the firm belief that students and teachers need to experience the power of mathematics to help better understand, analyse and solve real world problems outside of mathematics itself – and to do so in realistic contexts. Criteria of Teams: Either 4 Singaporeans or 3 Singaporeans & 1 Foreigner. Registration of IMMC: Jan More info on Singapore Round: http://mathmodelling.sg/immc/ 2 top teams in the Singapore Round will be selected to compete in IMMC International Round. The winning teams in International Round will be traveling overseas (Country to be confirmed) to attend Prize Ceremony. More info on International Round: https://immchallenge.org/	***	S\$0	Interested Y5-6 Math HL students can email Mr Hong to register to be shortlisted for this year's IMMC. Teachers will do final selection based on skills within the teams and commitment levels.
United Kingdom Intermediate Mathematical Olympiad (IMOK)	17 Mar (Note that this is during the March Term Break.	United Kingdom Intermediate Mathematical Olympiad (IMOK) is the second stage of the national level competition of United Kingdom aimed at pupils in Secondary 4 or below, which is organized by the United Kingdom Mathematics Trust. It is a 2-hour paper with 6 problems, taken by students in their own schools. Around 500 of the highest scorers in each school year are invited to take part in the Intermediate Mathematical Olympiad papers. All invited participants receive a UKMT keyfob and a Certificate of Qualification, Merit or Distinction depending on performance. The top 100 students in each paper receive medals; coloured bronze for Cayley, silver for Hamilton and gold for Maclaurin. More information can be found from the official website.	***	S\$0	By invitations only. (Top performing students from UKIMC)
United Kingdom Intermediate <u>Kangaroo</u> (IMOK)	(Note that this is during the March Term Break.)	Kangourou sans Frontières (KSF) is an independent association, whose purpose is to organise the annual Kangaroo contest with the aim of promoting mathematics among young people around the world. The name sounds strange, but recognises the fact that the organisation was inspired by the Australian Mathematics Trust. Each year over six million school pupils aged 5-18 from more than 50 countries throughout the world take part at various levels. The UKMT has been involved in Kangaroo activities for many years and uses the hour-long multiple-choice papers (in English) as an extension to the Intermediate Challenge. Usually around 5,500 pupils from all three year groups sitting the Intermediate Challenge are invited to sit either the grey or pink Kangaroo papers, dependent on school year. In 2014, entry numbers were increased to around 8,000 invitees. The Kangaroo papers are taken no earlier than the third Thursday in March, and solutions are not made public until the following month. More information can be found from the official website.	**	S\$0	By invitations only. (Top performing students from UKIMC)
American Invitational Mathematics Examination (AIME)	7 Feb & 15 Feb (May be Online this year. Details are not yet released by organisers.)	Students who perform exceptionally well on the AMC 10/12 are invited to continue participating in the series of examinations that culminate in participation in the International Mathematical Olympiad (IMO), the most prestigious and difficult secondary mathematics examination in the world. The AMC administers a series of increasingly selective contests to determine the six-member team that will represent the United States of America at the IMO. American Invitational Mathematics Examination (AIME) is the first competition in the series, which is intended to provide further challenge and recognition, beyond that provided by the AMC10 or AMC12, to the many high school students in North America who have exceptional mathematical ability. All students who took the AMC 12 and achieved a score of 100 or more out of a possible 150 or were in the top 5% are invited to take the AIME. All students who took the AMC 10 and had a score of 120 or more out of a possible 150, or were in the top 2.5% also qualify for the AIME. Two versions of the AIME are given on two different dates, about two weeks apart, in late March. Unlike the AMC 10/12, a student can only take the AIME once, and is encouraged to do so on the first date offered. There is no additional registration fee for the American Invitational Mathematics Examination, unless you choose to take the second sitting of the exam. The top scoring US citizens and students legally residing in the United States and Canada (with qualifying scores, based on a weighted average) are invited to take the USAMO/USAJMO. More information can be found from the official website. All past year problems and solutions are available online.	***	S\$0	By invitations only. (Top performing students from AMC10A/12A and AMC10B/12B in the PREVIOUS year)
International Mathematics Competition National Selection Test (IMC)	Early Apr (Held by MOE in external venues)	Selection test is conducted by MOE. Students who performed well will represent Singapore in IMC overseas. Every year, Singapore sends two teams for the international competition. The selection test is usually conducted in end of March. The format and participation criteria are as follows: • A 2-hour paper with two sections: Section A consists of 12 problems while Section B consists of 3 problems. • Each invited school may send up to 8 students for the selection test. • Only Singaporean or Permanent Residents are permitted	***	S\$0	By invitations only. For top performing Y2 - 3s in various math competitions. Limited to 8 students from the school.

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		GEB will not reveal the scores of the selection test. The top 8 scorers of the test will represent Singapore in the competition. In the situation where these top 8 scorers come from different schools, the training of these 8 representatives will be split up among the schools that are involved.			
Anglo-Chinese School (Independent) Inter- class Mathematics Challenge (ACMC) Online	20 May (Online format)	Anglo-Chinese School (Independent) Mathematics Competition Team (MCT) organizes the Inter-class Mathematics Challenge (ACIMC) every year. The objective of this competition is to spur on our students' interests in studying mathematics and to test the ingenuity and mathematical problem-solving ability of the participants. The competition is initiated by students and the questions are set and marked by MCT Executive Committee members. The competition includes students from different levels. The difficulty of questions is carefully adjusted so that the students will find these questions fun and challenging. The competition will be online and open-book format. Studnets can sit for this competition at home or anyplace with internet connection.	**	S\$0	Compulsory for newcomers and those interested to join Math Competition Team.
Singapore Mathematics Olympiad (SMO) – Round 1	Junior & Senior Category Early June Open Category Early June (Details yet to be released by the external organisers) (Overseas scholars need to take note when planning your trips)	The Singapore Mathematical Olympiad (SMO) Round 1 is the national mathematics competition in Singapore organized by Singapore Mathematical Society. It is the largest and oldest mathematics competition in Singapore. It started as the Inter-School Mathematical Competition in the mid-1950. It was renamed Singapore Secondary Schools Mathematics Competitions (for the Secondary Section) and the Singapore Mathematical Olympiad from the late 1980's. The current name Singapore Mathematical Olympiads (Junior, Senior and Open) started in 1995. Each year, thousands of students from all over the country take part in SMO. • The Junior Section consists of 10 multiple-choice questions, each with five options, and 25 open-ended questions. The Junior Test is geared towards Lower Secondary students, and topics tested include number theory, pattern recognition, geometry, simple combinatorics and algebra. Noticeably, trigonometry is not included as a test subject, because trigonometry is not included in the Lower Secondary mathematical curriculum. • The Senior Section consists of 10 multiple-choice questions, each with five options, and 25 open-ended questions. The Senior Test is geared towards Upper Secondary students, and topics tested include number theory, combinatorics, geometry, algebra, probability. • The Open Section comprises 25 open-ended questions, and geared towards preuniversity students. Topics tested include number theory, combinatorics, geometry, algebra, probability, but of a higher difficulty level than the Senior Section. SMO awardees will be considered for CCA Awards. Top SMO awardees are invited to SMO Round 2 held during June. Overseas scholars do note that round 2 is essential for achieving top awards so plan your trips accordingly.	***	S\$8	Y1/Y2/Y3/Y4/Y5/Y6
Singapore Mathematics Olympiad (SMO2) – Round 2	Junior & Senior Category 24 Jun (Sat) Open Category 1 July (Sat) (During Holidays and held on Sat at external venues. Overseas scholars need to take note when planning your trips)	 The Singapore Mathematical Olympiad (SMO) Round 2 is the second stage of national mathematics competition in Singapore to select its national training teams. Usually, the top 10 percent of participants are invited for the second round, and helps determine the individual rankings of the test takers. The invitation is usually sent out in mid of June. The second round for Junior and Senior Sections are held on the last Saturday before school reopens, and for Open Section, it usually on the first Saturday after the June holiday. The Junior Invitational Round consists of a 5-question, 3-hour long paper. The Open Invitational Round consists of a 5-question, 4-hour long paper. This test will help determine the individual rankings of the scorers, and in addition, it acts as a guideline to select Singaporean or Permanent Resident participants for the National Team training team, whereby a further six will then be selected for the International Mathematical Olympiad. More information can be found from the official website. 	****	S\$0	By invitations only. (Top performing students from SMO round 1)
Australian Mathematics Competition (AMC)	Early Aug (Date and prices) may vary. To be determined by Organisers)	The Australian Mathematics Competition is the national mathematics competition of Australia, which is run by the Australian Mathematics Trust for students from year 3 up to year 12 in Australia, and their equivalent grades in other countries. It is the world's largest mathematics competition. There is no official declared syllabus which determines the scope of the problems presented to the students. However, all problems can be solved without the use of calculus. Topics include arithmetic, number theory, combinatorics, geometry, measurement, algebra and probability. Despite the name of the competition, students are allocated awards for their performance relative to other students in their region, of the same year level. The award scheme is as such • Prize – Students above the 99.7 percentile • High Distinction – Students between the 98 and 99.7 percentile • Distinction -Students between the 85 and 98 percentile • Credit – Students between the 50 and 85 percentile • Proficiency – Students below the 50 percentile who have a satisfactory score (at least 32 but may sometimes be lower)	**	S\$6.50	Y1/Y2/Y3/Y4/Y5/Y6

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		 Students who have won a prize may also receive a medal if they are determined to have performed outstandingly well with respect to region and competition as a whole. Students who achieve the maximum score are awarded the Peter O'Halloran Certificate. 			
		More information can be found from the official website.			
Australian Intermediate Mathematics Olympiad (AIMO)	7 Sep (During Term Break. Date and prices may vary. To be determined by Organisers)	The Australian Intermediate Mathematics Olympiad (AIMO) is a 4-hour mathematics competition in September for students up to Year 10 level. AIMO is one of the competitions used to determine which students are selected to a number of invitation-only events including other mathematics competitions and special enrichment classes. Some students who have performed well in the AIMO have progressed through these other events and a few have achieved the ultimate—representing Australia in the International Mathematical Olympiad. The competition is suitable for other students who have performed well in the AMC (High Distinction or Distinction) and is designed as an endpoint for students who have completed the Gauss or Noether stage of the MCYA Enrichment program. More information can be found from the official website.	***	S\$20+	Y1/Y2/Y3/Y4 Members ONLY
United Kingdom Senior Mathematics Challenge (UKSMC)	4 Oct	The United Kingdom Senior Mathematics Challenge (UKSMC) is the first stage of the national competition of United Kingdom, organized by United Kingdom Mathematics Trust. It is aimed at all 16-19 year olds studying mathematics in Year 6 and below. The challenge involves answering 25 multiple choice questions in 90 minutes and is sat in school under normal exam conditions. Pupils fill in the answer sheet in B or HB pencil and the Challenge is marked by UKMT using an optical mark reader. The top 60% of students nationally receive a gold, silver or bronze certificate in the ratio 1:2:3 and each institution receives a Best in School certificate. Top performing students are then invited to take part in follow on rounds and the very best can represent their country in the International Mathematical Olympiad. Around 1000 top scorers in the Senior Challenge are invited to take part in the British Mathematical Olympiad Round 1.	*	S\$4.50	Y1/Y2/Y3/Y4/Y5 (Y4 Express and Y6 student need to check your final exam schedule for any clashes with competition before registering.)
		More information can be found from the official website.			
American Mathematics Contest (AMC10A/12A)	(May be ONLINE this year. Details are not yet released by external organisers.)	American Mathematics Contest (AMC10A/12A) are the first of a series of competitions in high school mathematics that determine the United States team for the International Mathematical Olympiad (IMO), which are organized by Mathematical Association of America. The AMC10 and AMC12 are both 25-question, 75-minute, multiple choice examinations in secondary school mathematics containing problems which can be understood and solved with pre-calculus concepts. Each contest contains about 12 of the same math problems. Two different versions of the contests are given on two dates in February. The A contests are held on the first Tuesday in February, with the B contests 15 days later. Students are eligible to take an A exam and a B exam, though they may not take both the AMC10 and AMC12 from the same date. If a student takes both exams, they may use either score towards qualification to the AIME. AMC10A for those age under 17.5 on day of contest. AMC10A for those age under 19.5 on day of contest. Top students in AMC10A/12A will be invited to compete in AIME in the next year. More information can be found from the official website. All past year problems and solutions are available online.	***	S\$14	Y1/Y2/Y3/Y4/Y5/Y6 (Y4 Express and Y6 student need to check your final exam schedule for any clashes with competition before registering.)
American Mathematics Contest (AMC10B/12B)	Mid Nov (May be ONLINE this year. Details are not yet released by external organisers.)	American Mathematics Contest (AMC10A/12A) are the first of a series of competitions in high school mathematics that determine the United States team for the International Mathematical Olympiad (IMO), which are organized by Mathematical Association of America. The AMC10 and AMC12 are both 25-question, 75-minute, multiple choice examinations in secondary school mathematics containing problems which can be understood and solved with pre-calculus concepts. Each contest contains about 12 of the same math problems. Two different versions of the contests are given on two dates in February. The A contests are held on the first Tuesday in February, with the B contests 15 days later. Students are eligible to take an A exam and a B exam, though they may not take both the AMC10 and AMC12 from the same date. If a student takes both exams, they may use either score towards qualification to the AIME. AMC10B for those age under 17.5 on day of contest. AMC10B for those age under 19.5 on day of contest. Top students in AMC10B/12B will be invited to compete in AIME in the next year. More information can be found from the official website. All past year problems and solutions are available online.	***	S\$14	Y1/Y2/Y3/Y4/Y5/Y6 (Y4 Express and Y6 student need to check your final exam schedule for any clashes with competition before registering.)

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British Mathematics Olympiad (BMO1)	(Date and prices may vary. To be determined by Organisers.)	British Mathematics Olympiad (BMO1) is the second stage of the national competition of United Kingdom, which is organized by United Kingdom Mathematics Trust and British Mathematical Olympiad Subtrust. BMO1 is a 3.5-hour paper with 6 problems, taken by students in their own schools. Based on performances in UK Senior Mathematics Challenge (UKSMC). Typically 1300 students sit BMO 1. A team of around 25 markers gathers in December to mark all the scripts over a 3-day period. The top 100 students receive prizes, who are qualified to represent the UK at the IMO are invited to Round 2. The top 25% of scorers in BMO1 receive a Certificate of Distinction. Of the remaining candidates, those who qualify automatically to sit the paper receive a Certificate of Qualification. Discretionary (paid-for) candidates are only eligible for Distinction certificates. For BMO1 only, gold, silver and bronze medals are awarded to the top 100 candidates in roughly the ratio 1:2:3. The past year papers are available on their official websites (without solutions), and there are three books written based on the past years' BMO1 problems: • [1965-1996] Tony Gardiner, The Mathematical Olympiad Handbook: An introduction to problem solving based on the first 32 British Mathematical Olympiads 1965–1996, OUP, 1997. • [1996-2007] Geoff Simth, A Mathematical Olympiad Primer (2nd Edition), UKMT, 2011 • [2007-2014] British Mathematical Olympiad Round 1 Past Papers 2011-2014, UKMT, 2015 Top BMO1 students will be invited to compete in BMO2 held early in the next year. More information can be found from the official website.	***	S\$40+	Y3/Y4/Y5 By invitations only. Only top performers in SMO2 will be invited to participate in BMO1)

	Competitions not hosted by CCA.			
You can register with the <u>organisers directly via the links</u> provided.				
Hua Xia Cup Round 1 and 2 - China National Mathematics Olympiad	In first round, students have 75 minutes to complete the competition. A final answer is needed for every question but working is not required. The test is in written form only. There are 20 questions in total with a maximum mark of 120: question 1 to question 10 is worth 5 marks each, and question 11 to question 20 is worth 7 marks each. Certificates of High Distinction/Distinction/Merit are awarded to the top 10%/20%/30% participants of the competition respectively. Top students in HXC1 will be invited to compete in the HXC2, round 2. Register via http://asiamathsalliance.com/hua-xia-cup .	Y1/Y2/Y3		
Singapore and Asian Schools Math Olympiad (SASMO)	Singapore and Asian Schools Math Olympiad (SASMO) is devoted and dedicated to bringing a love for Mathematics to students. Unlike most Math Olympiad Competitions, which aims to arouse students' interest and enthusiasm for mathematical problem solving, develop mathematical intuition, reasoning and logical thinking, as well as creative and critical thinking. Register via https://sasmo.sg/registration/ .	Y1/Y2/Y3/Y4		
Southeast Asian Mathematical Olympiad (SEAMO)	Southeast Asian Mathematics Olympiad (SEAMO) was introduced in 2016, catering to students from ages 7 to 18 years. SEAMO will provide feedback and enrichment to schools and students of all standards. Students are asked to solve 25 problems in 90 minutes. There are 6 papers: Paper A/Lower Primary (Grades 1-2), Paper B/Middle Primary (Grades 3-4), Paper C/Upper Primary (Grades 5-6), Paper D/Junior (Grades 7-8), Paper E/Intermediate (Grades 9-10) and Paper F/Senior (Grades 11-12). Problems get progressively more difficult towards the end and thus are worth more marks. Register via https://seamo-official.org/ .	Y1/Y2/Y3/Y4/Y5/Y6		
American Mathematics Olympiad (AMO)	American Mathematics Olympiad (AMO) is an affiliate of Math Olympiads for Elementary and Middle Schools, USA (MOEMS) and there are similar affiliates in Columbia, Iceland, Australia (APSMO), Philippines, China and India. AMO is organised by SASMO committee. American Mathematics Olympiad is open to all Primary 3, 4, 5, 6 and Secondary 1,2,3 students in Singapore, Indonesia and Malaysia (or Grade 3, 4, 5, 6, 7, 8 and 9 for International Schools). The duration of the AMO is 1 hour and 30 minutes for each level. Calculators are not permitted during the contest. Each participant receives a Certificate of Participation or an award certificate for winners below. AMO awards certificates and Gold medals (top 10%), Silver medals (next 10%) and Bronze medals (next 10%) to all participants. Register via https://www.amo.sg/registration/ .	Y1/Y2/Y3		
American Mathematics Contest (AMC8)	The American Mathematics Competitions (AMC) are the first of a series of competitions in high school mathematics that determine the United States team for the International Mathematical Olympiad (IMO). The American Mathematics Contest 8 (AMC8) (formerly the American Junior High School Mathematics Examination) for students in grades 8 and below, begun in 1985. AMC8 is a 25 multiple-choice question, 40 minute test for middle schoolers designed to promote the development and enhancement of problem solving skills. No problems require the use of a calculator, and their use has been banned since 2008. The contest is held on a Tuesday in mid of November. AMC8 is scored based on the number of questions answered correctly only. There is no penalty for getting a question wrong, and each question has equal value. Thus, a student who answers 23 questions correctly and 2 questions incorrectly receives a score of 23. This is not a standardized test; i.e. no school has to take it, but some schools choose to, mainly to encourage growth in mathematics among their students. Register via http://asiamathsalliance.com/hua-xia-cup .	Y1/Y2		

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Updated on Jan 2023

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Anglo-Chinese School
(Independent)
Mathematics Competition Team

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