# SASMO

Singapore & Asian Schools
Math Olympiad

## INFO PACK 2026

SINGAPORE INTERNATIONAL MASTERY CONTESTS CENTER

**SIMCC**

INTERNATIONAL

# The Value of SIMCC and STSF

**National Assessment - Free**
**Country Awards**
Perfect Score = 1.5 ISPs
Top 8% - Exemplary Award = 1 ISP
Next 12% - Outstanding Award = 0.5 ISP
Next 20% - Commendable Award = 0.25 ISP
Next 10% - Honorable Mention = 0.15 ISP

**International Assessments conducted in respective SIMCC Countries and Territories**

SINGAPORE MATH CHALLENGE SMC

2026
**SCSC**
SINGAPORE CAMBRIDGE SCIENCE CHALLENGE

2027
**SCEC**
SINGAPORE CAMBRIDGE ENGLISH CHALLENGE

**International Junior Honor Society**

Get inducted into IJHS with 4 ISPs

**Lowest Cost**
**Country Awards**
Perfect Score = 3 ISPs
Top 8% - Gold Award = 2 ISPs
Next 12% - Silver Award = 1 ISP
Next 20% - Bronze Award = 0.5 ISP
Next 10% - Honorable Mention = 0.25 ISP

**International Contests conducted in respective SIMCC Countries and Territories**

SASMO Singapore & Asian Schools Math Olympiad — American Mathematics Olympiad — SIAT Singapore International Arts Tournament — VIJSO VANDA INTERNATIONAL JUNIOR SCIENCE OLYMPIAD — INTERNATIONAL JUNIOR INFORMATICS OLYMPIAD — IJCO INTERNATIONAL JUNIOR CYBERSECURITY OLYMPIAD — 2026 IJAIO

**Lowest Cost**
**Global Awards**
Perfect Score = 3.5 ISPs
Top 10% - Gold Award = 2.5 ISPs
Next 15% - Silver Award = 1.5 ISP
Next 25% - Bronze Award = 0.75 ISP
Next 20% - Honorable Mention = 0.35 ISP

**Global Competitions conducted Online**

SINGAPORE MATH GLOBAL FINAL — Mustang Math Tournament — JUNIOR CANADIAN CHEMISTRY OLYMPIAD JCCO — 2027 **SCSGF** SINGAPORE CAMBRIDGE SCIENCE GLOBAL FINAL — 2028 **SCEGF** SINGAPORE CAMBRIDGE ENGLISH GLOBAL FINAL

SOAR students winning Silver and above awards in SASMO or AMO invited to join SMGF and MMT through S²LSP scholarships

**Reasonable Cost**
**Global Awards**
Perfect Score = 4 ISPs
Top 10% - Gold Award = 3 ISPs
Next 15% - Silver Award = 2 ISPs
Next 25% - Bronze Award = 1 ISP
Next 20% - Honorable Mention = 0.5 ISP

**Global Finals hosted in Singapore (SIMOC) and rotated to one SIMCC Country annually (STEAM AHEAD)**

SIMOC Singapore International Math Olympiad Challenge — STEAM AHEAD — IJMO International Junior Math Olympiad — INTERNATIONAL JUNIOR INFORMATICS OLYMPIAD GLOBAL FINALS — National Junior Arts Olympiad — VIJSO VANDA INTERNATIONAL JUNIOR SCIENCE OLYMPIAD GLOBAL FINALS — IJCOGF INTERNATIONAL JUNIOR CYBERSECURITY OLYMPIAD GLOBAL FINALS — 2026 IJAIOGF

**Acquire Skills, Recognition, and Scholarships for SUCCESS**

# SCHOLARSHIP ENHANCEMENT INITIATIVES

**50 Countries and Territories**

**22 Competitions & Challenges**
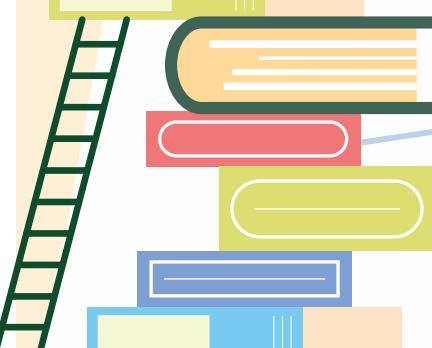
**More Than 950,000 Contestants**

**01** Many internationally recognized competitions with prominent university professors as our Board of Advisors plus contests with university certifications.

**02** Many S²LSP scholarships and networking support such as IJHS, YALA, GMOS, Rangers, EDU for Good, and Edufairs with scholarships, GSLC, and SLCs networking.

**03** Admissions to Best Fit Universities with scholarships and UGS Support.

STEAM INTERNATIONAL TOURNAMENT

Over **S$3 Million** in Scholarship Support to help students and teachers strengthen their portfolios and a Powerful Network to help our contestants to win more scholarships.

# SIMCC Competition Timeline: 2026



(LET'S GET STARTED!)

**SASMO** — Singapore & Asian Schools Math Olympiad

SIAT / SINGAPORE MATH GLOBAL FINALS

VISO

SIMOC

IJCO — INTERNATIONAL JUNIOR CYBERSECURITY OLYMPIAD / JCCO JUNIOR CANADIAN CHEMISTRY OLYMPIAD

(Cambodia ONLY)

INTERNATIONAL JUNIOR INFORMATICS OLYMPIAD

SCSC — SINGAPORE CAMBRIDGE SCIENCE CHALLENGE / SIMC / IJAIO

American Mathematics Olympiad

J F M A M J J A S O N D

2027 AHEAD →

# SASMO Competition Progression:

| | Certificate of Participation | Honorable Mention | Bronze Winner | Silver Winner | Gold Winner and Perfect Scorer |
|---|---|---|---|---|---|
| Eligible to join **SINGAPORE MATH GLOBAL FINALS?** | Not Eligible | Eligible to join | Eligible to join | Eligible to join | Eligible to join |
| Eligible to join **SIMOC?** | Not Eligible | Eligible to join **Training is Required** | Eligible to join **Training requirement set by CCP** | Eligible to join **Training requirement set by CCP** | Eligible to join **Training is optional** |
| Eligible to join **IJMO?** | Not Eligible | Not Eligible | Eligible to join **Training is Required** | Eligible to join **Training requirement set by CCP** | Eligible to join **Training is optional** |

# STEAM INTERNATIONAL TOURNAMENT

There is a strong demand globally for STEAM talent led by corporations to get staff for their businesses. Hence, SIT is a great initiative to identify these talents for corporations and also various organisations giving scholarships to prepare students for STEAM.

## STEAM INTERNATIONAL TOURNAMENT (SIT)

SIMCC and Scholastic Trust Singapore (STS) is delighted to launch the STEAM International Tournament (SIT). SIT is a collection of reputable academic competitions in Science, Mathematics, Informatics, Cybersecurity, Artificial Intelligence (AI) and Arts, which help distinguish students' achievements in STEAM. Students who win awards in any of the qualifying contests below score points for the SIT Awards:

1. **Science** = Vanda International Junior Science Olympiad (VIJSO).
2. **Mathematics** = American Mathematics Olympiad (AMO) and Singapore and Asian Schools Math Olympiad (SASMO).
3. **Informatics** = International Junior Informatics Olympiad (IJIO).
4. **Cybersecurity** = International Junior Cybersecurity Olympiad (IJCO).
5. **Artificial Intelligence (AI)** = International Junior Artificial Intelligence Olympiad (IJAIO).
6. **Arts** = Singapore International Art Tournament (SIAT).

### Rules:
1. Each student will be awarded SIMCC Scholarship points from each contest.
2. SIT points must be collected within individual academic year from August 1 to July 31.
3. The SIT points collected will determine the SIT Award won for that year.

### IJHS Scholarship Points:

**SIT grants additional IJHS Scholarship points based on the combined awards received from AMO/SASMO, IJIO, VIJSO, IJCO, IJAIO, and SIAT.**

| | |
|---|---|
| **SIT Star Award** ⟶ | Earn extra 3 Individual Scholarship Point (ISP). |
| **SIT Gold Award** ⟶ | Earn extra 2 Individual Scholarship Point (ISP). |
| **SIT Silver Award** ⟶ | Earn extra 1 Individual Scholarship Point (ISP). |
| **SIT Bronze Award** ⟶ | Earn extra 0.5 Individual Scholarship Point (ISP). |

SIT Gold and above Awardees from grade 7 and above can apply for S²LSP scholarship to be trained as SIMCC Ranger camp leaders from 2026.

CCPs **who enrol 1000 or more SASMO 2026 contestants** will be offered S²LSP MMT competition scholarships for Top SASMO Winners from grades 4 to 12.

No Travel needed, and earn more IJHS Scholarship points to advance to top schools and universities with

Earn additional scholarship points.

**Table of scholarship points from all SIMCC competitions.**

**SIT awards will be announced together with the induction of IJHS Scholars annually on August 17th, 2026.**

| National Contest award | Perfect Score | Gold | Silver | Bronze |
|---|---|---|---|---|
| IJHS Scholarship Point | 3 | 2 | 1 | 0.5 |

| Combined Qualifying National Contest IJHS Scholarship Points | ≥ 10 points | 8 to 9 points | 6 to 7 points | 5 points |
|---|---|---|---|---|
| Award | SIT Star | SIT Gold | SIT Silver | SIT Bronze |
| Extra IJHS Scholarship Point For Award | +3 ISP | 2 | 1 | 0.5 |

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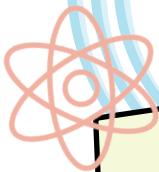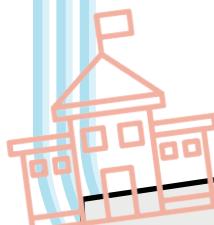
# ABOUT SASMO

## OVERVIEW:

Created in 2006, SASMO is one of largest math olympiad competitions in Asia. More than 500,000 participants from over 20,000 schools participated in SASMO to date. In 2025, we now have more than 50 countries and territories.

The SASMO Team with the support of Advisory Council spend countless hours carefully developing contest papers which touch on both school and Olympiad maths. This combined effort allows participants to do better compared to pure-Olympiad papers, since they are familiar with some questions and can put on their thinking caps for others, bringing out the inner mathematician in them.

With realistic and high standards, SASMO contests aim to stretch the untapped thinking potential of the student population, their participation in SASMO will help them improve in school mathematics as well as higher order thinking skills (HOTS).

## SASMO
Singapore & Asian Schools
Math Olympiad

**50** Countries and territories

**More than 950,000 Contestants for all contests**

# COMPETITION FORMAT

SASMO is open to all Primary 1 to 6, Secondary 1 to 4 and JC1/2 students (Grades 1 to 12 students. Time given for contest is 90 minutes. Each level has a differentiated paper and contains 25 questions within 2 sections:

**90 Minutes**
**Total Score: 85 points**

To avoid negative scores, each student will begin with 15 points.

**NEW in 2026**

### Section A
# 15
**Multiple choice Questions**

2 points for each correct answer
0 point for each unanswered question
1 point deducted for each wrong answer

### Section B
# 10
**Non-routine Questions**

4 points for each correct answer
No penalty for wrong answers

Introducing SASMO for K2 students. Time given for contest is 60 minutes and contains 15 questions within 2 sections

**Introducing new K2 grade contest**
**60 minutes**

Total Score 85 points
To avoid negative scores, each student will begin with 10 points.

### Section A
# 10
**Multiple choice Questions**

4 points for each correct answer
0 point for each unanswered question
1 point deducted for each wrong answer

### Section B
# 5
**Non-routine Questions**

7 points for each correct answer
No penalty for wrong answers

# AWARDS

## Award Criteria:

To ensure fairness and global competitiveness, SIMCC applies the following award ratios:

- **Top 8%** ⟶ Gold
- **Next 12%** ⟶ Silver
- **Next 20%** ⟶ Bronze
- **Next 10%** ⟶ Honorable Mention

## Country Enrolment:

- Each country enrolling **500 or more students** will have the award ratios applied independently.

- If a country has **fewer than 500 contestants**, its students will be combined with another country's cohort. In such cases, SIMCC **cannot guarantee** that awards will follow the exact ratios stated above.

## Perfect Score Award:

- Students who achieve a **Perfect Score** will receive:
  - ⟶ A **personalized Perfect Score Medallion.**
  - ⟶ An **SGD100 voucher each**, up to a maximum of **SGD5000** for all perfect scorers combined

- In the rare event that there are **more than 50 perfect scorers**, the **SGD5000 will be divided equally** among all of them.

# STUDENT AWARDS



*Personalized medal for Perfect Scorers*

 *Gold medal*

 *Silver medal*

 *Bronze medal*

**Participants will receive the following:**

1. SGD100 voucher each (up to a maximum of $5000) for Perfect Scorers.
2. Certificates for Perfect Scorers, Gold, Silver and Bronze winners.
3. Personalized medallion for Perfect Scorers.
4. Medals for Gold, Silver and Bronze winners.
5. E-certificates are given to participants who qualify for Honourable Mention and Certificate of Participation.

# CERTIFICATES



**Perfect Score Award**



**Bronze Award**



**Gold Award**



**Honourable Mention**



**Silver Award**



**Certificate of Participation**

# PERFORMANCE STATISTICAL REPORT

## Performance by Questions

Table below shows which questions student got correct.

| | | | | |
|---|---|---|---|---|
| Q1 Correct ✓ | Q2 Correct ✓ | Q3 Correct ✓ | Q4 N/A | Q5 Correct ✓ |
| Q6 Correct ✓ | Q7 Correct ✓ | Q8 Correct ✓ | Q9 Correct ✓ | Q10 Correct ✓ |
| Q11 Correct ✓ | Q12 N/A | Q13 Correct ✓ | Q14 N/A | Q15 Incorrect ✗ |
| Q16 Correct ✓ | Q17 Correct ✓ | Q18 Correct ✓ | Q19 Correct ✓ | Q20 Correct ✓ |
| Q21 Correct ✓ | Q22 Correct ✓ | Q23 N/A | Q24 Correct ✓ | Q25 Correct ✓ |
| Q26 Correct ✓ | Q27 Incorrect ✗ | Q28 Incorrect ✗ | Q29 Incorrect ✗ | Q30 N/A |

## Performance by Topics

Percentage on top: Student's average by topics | Percentage middle: School average by topics | Percentage below: National average by topics.

| ARITHMETIC AND NUMBER CONCEPTS | ALGEBRAIC THINKING AND PATTERNS | REASONING AND PROBLEM SOLVING | ART OF COUNTING | GEOMETRIC AND SPATIAL REASONING |
|---|---|---|---|---|
| **100%** 👤 | **50%** 👤 | **71%** 👤 | **43%** 👤 | **67%** 👤 |
| 76% 🎓 | 45% 🎓 | 43% 🎓 | 29% 🎓 | 27% 🎓 |
| 76% 🚩 | 45% 🚩 | 43% 🚩 | 29% 🚩 | 27% 🚩 |

## Grade Performance Analysis

| Topic | Your Score | School Range | Average |
|---|---|---|---|
| ARITHMETIC AND NUMBER CONCEPTS | 30 | 18 - 30 | 22 |

Each participant will receive a digital report detailing their performance, along with dynamic statistical analysis that highlights their strengths and areas for improvement across different topics. Additionally, this report includes a comparison of their performance with that of their peers in the same grade, both within their school and country/territories, as well as globally. These reports can be downloaded from SIMCC Member Development Portal (MDP) by students, parents or teachers.

🔖 Home ⬅

### Student and Competition Info

| Name | Index No | Competition Year | Competition Name |
|---|---|---|---|
| GOH ZHUO | 060220002191 | 2022 | SASMO 2022 |

**Award:** BRONZE

**Score:** 35

### Task's Results Info

| Number of Tasks | Number of Correct Answer | Number of Wrong Answer | Number of Blank Answer |
|---|---|---|---|
| 25 | 10 | 14 | 1 |

### Global Rank

| global_rank | Population | MAX | AVG | MIN | MED |
|---|---|---|---|---|---|
| BRONZE 294 | 3029 | 100.00 | 29.81 | 0.00 | 18.00 |

### Country Rank

| country_rank | Population | MAX | AVG | MIN | MED |
|---|---|---|---|---|---|
| 25 | 87 | 97.00 | 28.93 | 0.00 | 22.00 |

### School Rank

| school_rank | Population | MAX | AVG | MIN | MED |
|---|---|---|---|---|---|
| 1 | 1 | 35.00 | 35.00 | 35.00 | 35.00 |

### Detail Report

| Task ID | Task order | Topic | Result | Level of Difficulty | % global correct ratio | % cont |
|---|---|---|---|---|---|---|
| 1 | 1 | NUMBER SENSE , NUMBER THEORY | Wrong | Easy | 38.43% | 4 |
| 2 | 2 | NUMBER SENSE , NUMBER THEORY | Wrong | Easy | 32.65% | 2 |
| 3 | 3 | ALGEBRA , EXPRESSIONS , PATTERNS , SEQUENCES | Correct | Easy | 50.97% | 5 |
| 4 | 4 | ALGEBRA , EXPRESSIONS , PATTERNS , SEQUENCES | Correct | Easy | 49.19% | 5 |
| 5 | 5 | NUMBER SENSE , NUMBER THEORY | Correct | Easy | 29.38% | 2 |
| 6 | 6 | NUMBER SENSE , NUMBER THEORY | Correct | Easy | 39.65% | 4 |
| 7 | 7 | ALGEBRA , EXPRESSIONS , PATTERNS , SEQUENCES | Wrong | Easy | 42.62% | 4 |
| 8 | 8 | ALGEBRA , GEOMETRY , PYTHAGOREAN THEOREM , SIMILAR TRIANGLES | Correct | Easy | 41.37% | 3 |
| 9 | 9 | GEOMETRY , SPATICAL REASONING | Wrong | Easy | 21.59% | 2 |
| 10 | 10 | HARD TO CLASSIFY , OTHER TOPICS | Wrong | Easy | 42.62% | 3 |
| 11 | 11 | NUMBER SENSE , NUMBER THEORY | Correct | Easy | 24.33% | 2 |
| 12 | 12 | ALGEBRA , EXPRESSIONS , PATTERNS , SEQUENCES | Wrong | Easy | 34.04% | 1 |
| 13 | 13 | LOGIC , REASONING | Correct | Easy | 51.93% | 6 |
| 14 | 14 | DATA ANALYSIS , PROBABILITY , STATISTICS | Correct | Easy | 32.22% | 4 |
| 15 | 15 | GEOMETRY , SPATICAL REASONING | Wrong | Easy | 22.81% | 2 |
| 16 | 16 | ALGEBRA , EXPRESSIONS , PATTERNS , SEQUENCES | Wrong | Medium | 18.03% | 1 |

### Topic vs Result

Result ● Blank ● Correct ● Wrong

| Topic | |
|---|---|
| ALGEBRA , EXPRESS... | 1 / 3 / 6 |
| NUMBER SENSE , N... | 4 / 2 |
| ALGEBRA , GEOMET... | 1 / 2 |
| GEOMETRY , SPATIC... | 3 |
| DATA ANALYSIS , PR... | 1 |
| HARD TO CLASSIFY ... | 1 |
| LOGIC , REASONING | 1 |

No of Questions (0 to 10)

# SIMOC

SIMOC 2026 is more than a competition — it's your chance to shine as both an individual and team champion while unlocking global opportunities. From scholarships and vocational training to leadership coaching by world-renowned mentor Joel Baurer, SIMOC empowers you to build skills, make international friends, and step confidently into the future as one of the Leaders of Tomorrow.

## Why Join SIMOC 2026?

Besides being one of the best mathematics competitions in the world, nurturing both individual and team champions, SIMOC 2026 offers unmatched opportunities and advantages that are leading the field:

• **Global EduFair Opportunities** – SIMCC Edufair will feature international schools and universities offering merit-based scholarships exclusively to SIMCC contestants, opening doors to world-class education pathways.

• **Over 100 Ranger Scholarships** – At the Edufair, SIMCC will be giving away more than 100 Ranger scholarships, providing students with unique opportunities to further their skills and experiences.  50 of these are for SIMOC contestants

• **Vocational Ranger Training Series** – A brand-new initiative to equip students with practical skills and career-ready competencies, complementing their academic achievements.

• **EDU for Good Awards** – SIMCC is supporting 150 schools to apply for the EDU for Good awards with Brands for Good. The top 70 institutions will be invited to Singapore to collect their awards and network with global leaders.

• **Networking & Collaboration** – Contestants will connect with peers, educators, and institutions worldwide, strengthening both academic and cultural exchange.

• **Prestige & Recognition** – Participation in SIMOC enhances students' profiles, showcasing excellence in mathematics and leadership on an international stage.

More info please check our website: **https://simoc.simcc.org/**

# STEAM AHEAD
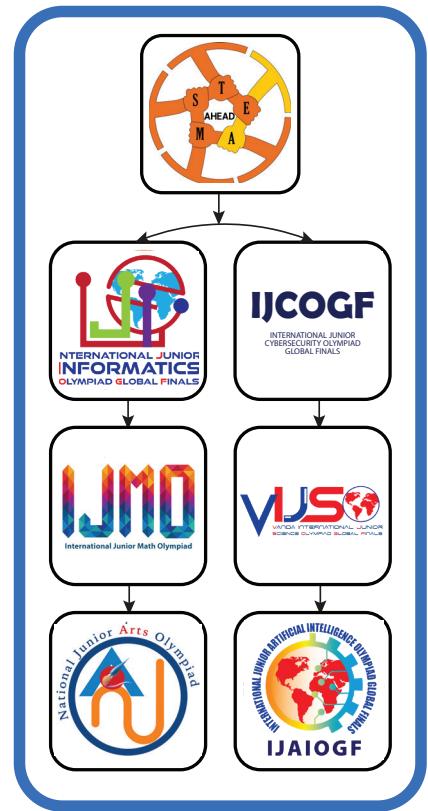


A COMBINATION OF 6 COMPETITIONS: International Junior Math Olympiad (IJMO), Vanda International Junior Science Olympiad Global Finals (VIJSOGF), International Junior Informatics Olympiad Global Finals (IJIOGF), International Junior Arts Olympiad (IJAO), International Junior Cybersecurity Olympiad Global Finals (IJCOGF), and International Junior Artificial Intelligence Olympiad Global Finals (IJAIOGF).

The Singapore's National Cybersecurity R&D Lab (NCL) will be offering Capture the Flag (CTF) as part of the International Junior CyberSecurity Olympiad Global Finals (IJCOGF). Online Video training recorded will be provided by NCL professors and the contest certificates and medals will be provided by NCL.

STEAM stands for Science, Technology, Engineering/Entrepreneurship, Arts and Mathematics. STEAM AHEAD is our initiative to combine our international academic competitions to educate students and bring them international exposure about possible career choices in these fields.

So, STEAM AHEAD offers multiple opportunities for students to win awards in IJMO Individual, VIJSOGF Individual & Team, IJIOGF individual & Team, IJAIOGF, & IJCOGF Individual & Team, together with IJAO Individual, plus Overall Champion in each grade level for IJMO, VIJSOGF, IJIOGF, IJAIOGF, and IJCOGF. The President's Award for Excellence in STEAM STAR (PAExS STAR) awarded to students with 10 or more Individual Scholarship Points (ISPs). PAExS Gold awarded to students with 8 to 9 Individual Scholarship Points (ISPs).

Please refer to the STEAM AHEAD info pack for more details or visit our website.
https://steamahead.simcc.org/

# SINGAPORE MATH GLOBAL FINALS

Mode of competition : Online/paper contest, must qualify through AMO, SASMO or SMC 2025
Region : World
Eligible for Grades : Primary 1 to Secondary 4/5, and Grades 1 to 11/12.
Award : Personalize Medallion and Certificate for Perfect Scores,
Medal and Certificate for Gold, Silver and Bronze Winner
E-certificate for Honorable mention and Certificate of participation

SINGAPORE MATH Global Finals will be held online/paper simultaneously in every country. Countries strong in Mathematics consistently use international benchmarks to scale up their academic value. Singapore's mathematics syllabus for instance, was developed after studying the mathematics syllables of many countries across the globe.

A strong foundation in the primary (elementary) Mathematics has enabled Singapore students to achieve top rankings at global benchmarking surveys such as The International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA). These surveys measure how well students at primary 4 (grade 4) and secondary 2 (grade 8) understand, apply and reason concepts in Mathematics and Science.

Today, many educational institutions have settled into a blended or hybrid learning model and want to see what other benefits their digital framework can offer. Using cloud technology enables them to gain visibility and accelerate the impact of teaching and learning systems. SIMCC has invested heavily in digitalisation since 2019, and we are using Mircosoft Power Business Intelligence (BI) to build dashboards for teachers.

We will be training teachers on how to use these powerful tools to provide :
1. Customized Reporting: Power BI enables you to create customized reports and visualizations based on your specific requirements.
2. Data Analysis: With Power BI, you can analyze various educational data points such as student academic performance, and more.
3. Performance Monitoring: Power BI provides measurable solutions for performance monitoring in educational institutions.
4. Efficient Workflow: Power BI allows you to arrange multiple tables, charts, and key performance indicators (KPIs) on a single page
5. Decision Making: By leveraging the power of data analysis and visualization, Power BI helps educational institutions make informed decisions based on accurate insights.
All for every question in contests created by SIMCC, they are tagged by up 3 topics with 3 difficulty levels. Teachers can drill down and examine each question so they can understand the challenges faced by their students and inform their teaching.

SINGAPORE MATH GLOBAL FINALS is open to all top 40% of winners of Singapore Math Challenge" in 2025 and also the top 50% of winners from SASMO and AMO 2025.

Individual contest papers for:
Grade 1 to 11/12 (Primary 1 to Sec 4/5).

More info please check our website: **smc.simcc.org**

**SMGF Gold: Recognized Among the World's Top 10% in Mathematics**
**A mark of excellence leading to success in the Singapore ASEAN MOE and prestigious scholarships.**

**SINGAPORE**
**MATH GLOBAL FINALS**

**Every SMGF contestant will get the SMGF Learning Management System (LMS) with answer key.**

# DIFFICULTY LEVEL OF MATHEMATICS COMPETITIONS

ORGANIZED BY SIMCC AND ICAS/REACH ASSESSMENT

## Hierarchy of SIMCC Math Competitions

### International Mathematical Olympiad (IMO)
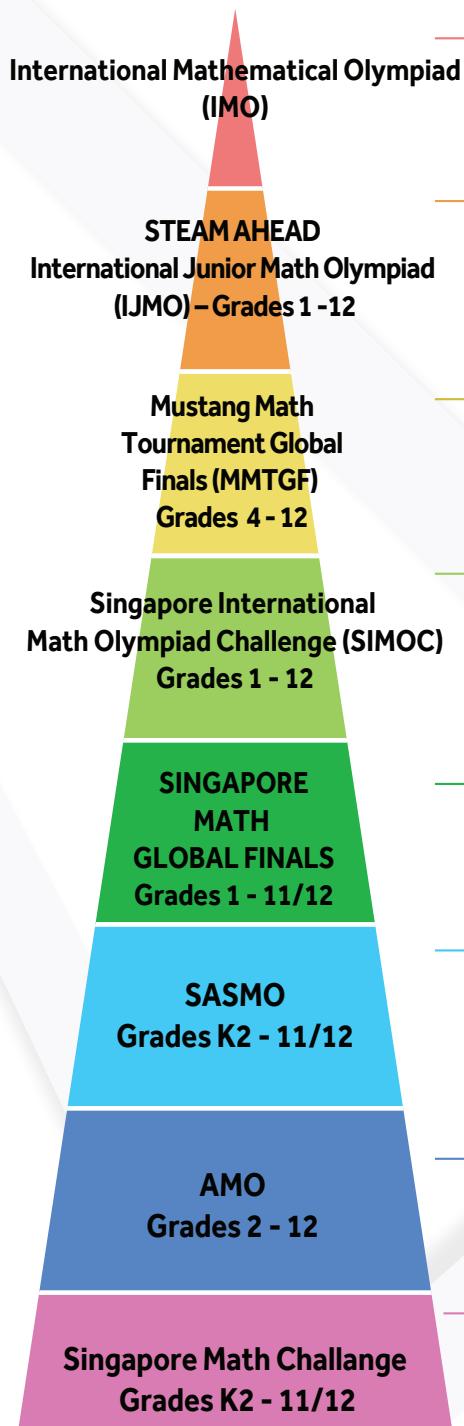
**Top 6 per Country**

The IMO is the world championship for High School students held annually in a different country. Each country will select their best 6 students to compete in this prestigious competition. Even an IMO bronze medallist may qualify for a NUS or NTU scholarship. SIMCC's Global Math Olympiad Scholarship Program –will prepare the top 60 SIMCC Grades 4 to 9 contestants to win their countries' National Math Olympiad so they will be selected as the 30 finalists for the National Team Training to decide the National IMO team of 6.

### STEAM AHEAD
### International Junior Math Olympiad (IJMO) – Grades 1 -12

**Top 10% of Country**

IJMO is organized by SIMCC in collaboration with the National Math Societies in Asian countries to identify and encourage young math talent. IJMO is part of STEAM AHEAD, which comprises 6 academic competitions where contestants who earn 10 or more SIMCC Individual Scholarship Points (ISPs) from IJMO, VANDA International Junior Science Olympiad (VIJSO), International Junior Informatics Olympiad (IJIO), International Junior Cybersecurity Olympiad (IJCO), International Junior AI Olympiad (IJAIO), and International Junior Arts Olympiad (IJAO), are awarded the President's Award for Excellence in STEAM (PAES) Star award. Winners of 8 to 9 ISPs win the PAES Gold award.

### Mustang Math Tournament Global Finals (MMTGF) Grades 4 - 12

**Top 20% of Country**

Mustang Math Tournament Global Finals (MMTGF) is organised by the Math Tournament Directors of University of California (UC Berkeley), John Hopkins University, Stanford University, and SIMCC. It is a high-level math competition to prepare grades 4 to 12 students to excel in the Ivy League universities Math Tournaments. Scholarships are awarded by top American universities to students who rank high in Math competitions. SIMCC will invite top MMT scorers to compete at selected Ivy League Math Tournaments to prepare them for UGS admissions and scholarships to top American universities.

### Singapore International Math Olympiad Challenge (SIMOC) Grades 1 - 12

**Top 30% of Country**

SIMOC aims to encourage creative thinking and problem-solving skills. It incorporates Maths Warriors and Math Master Mind team events into the individual Math Olympiad contest, which has been producing the best Overall Champions. SIMOC, which started in 2015, has more than 2,600 top participants gathering to compete in Singapore. The top 10 Math Olympiad winners per level from grades 4 to 9, are awarded the Global Math Olympiad Scholarship (GMOS) to prepare them for to win their country's National Math Olympiad competition, so that they are invited to the National Squad of the top 30 finalists to select the final 6 IMO representatives for their country. After just 3 years of GMOS, 7 GMOS scholars have been selected to represent their country for the IMO.

### SINGAPORE MATH GLOBAL FINALS Grades 1 - 11/12

**Top 40% of Country**

The Singapore Math Global Finals (SMGF) is the pinnacle of School Mathematics achievement. The best math students compete online globally to decide their global ranks across grades 1 to 12. Many SMGF Winners go on to win Singapore Ministry of Education (MOE) ASEAN, China, and India scholarships. Countries with more than 1,000 students enrolled in SMC qualify to send their top 6 students for free to the Clash of Math Titans Country Team Championships - SMGF.

### SASMO Grades K2 - 11/12

**Top 50% of Country**

Singapore & Asian Schools Math Olympiad (SASMO) is one of the largest math contest in Asia. Math is the best avenue to identify talent in gifted children. Increasing, there are many gifted schools that these talented students are vying for the limited spots for admission. SASMO will open the Grade K division in 2026 to support this Initiative to nurture gifted children. High achievement in SASMO is a strong indicator like MENSA scores for these gifted students. Gold/Silver/Bronze awardees are invited to participate in SIMOC and Gold/Silver awardees are invited to participate in IJMO.

### AMO Grades 2 - 12

**Top 55% of Country**

American Math Olympiad (AMO) is one of the well-recognized competitions set by professors from a top 100 state research university, Southern Illinois University (SIU) for grades 2 to 12 contestants. Gold/Silver/Bronze awardees are invited to compete in SIMOC and Gold/Silver awardees are invited to participate in IJMO. Honorable Mention and above winners are invited to compete in the SMGF.

### Singapore Math Challange Grades K2 - 11/12

**Top 65% of Country**

Singapore Math Competition (SMC) is the entry competition for School Mathematics using common core math standards used globally. The best math students in the country are ranked and then compared to other countries' awardees globally. Winners of Bronze and above are invited for the Singapore Math Global Finals held online to keep costs low and score points for induction to IJHS and scholarship awards. Countries with more than 1,000 students enrolled in SMC qualify to send their top 6 students for free to the Singapore Math Global Finals and the Clash of Math Titans Country Team Championships - SMGF.

## SIMCC Math Development Plan

# SYLLABUS

To access our FREE past 2 years SASMO papers, please visit: **https://form.simcc.org.**

## Kindergarten 2

- Number sequences and patterns
- Simple logic problems
- Non-routine problem solving
- Simple cryptarithms
- Spatial visualization
- Counting

## Grade 1-4: Primary 1-4

- Arithmetic and Statistics. Geometry and Mensuration.
- Solving word problems using model method (or any other non-algebraic methods)
- Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and simple cryptarithms)

## Grade 5-6: Primary 5-6

- Arithmetic and Statistics. Geometry and Mensuration
- Solving word problems using model method (or any other methods including algebra)
- Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

## Grade 7: Secondary 1

- Arithmetic and Algebra
- Geometry, Graphs and Mensuration
- Statistics
- Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

## Grade 8: Secondary 2

- Arithmetic and Algebra
- Geometry, Graphs and Mensuration
- Pythagoras' Theorem
- Statistics
- Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems and cryptarithms)

## Grade 9-12: Secondary 3-4, JC 1/2

- Arithmetic and Algebra
- Geometry, Graphs and Mensuration
- Pythagoras' Theorem and Trigonometry
- Statistics and Probability
- Non-routine problem solving (including number patterns, divisibility tests, spatial visualisation, logic problems

For more information, visit: **https://sasmo.simcc.org/**

# Sample Questions for Kindergarten 2

### Question 1

Study the pattern below and find the '?".



A    B    C    D    E
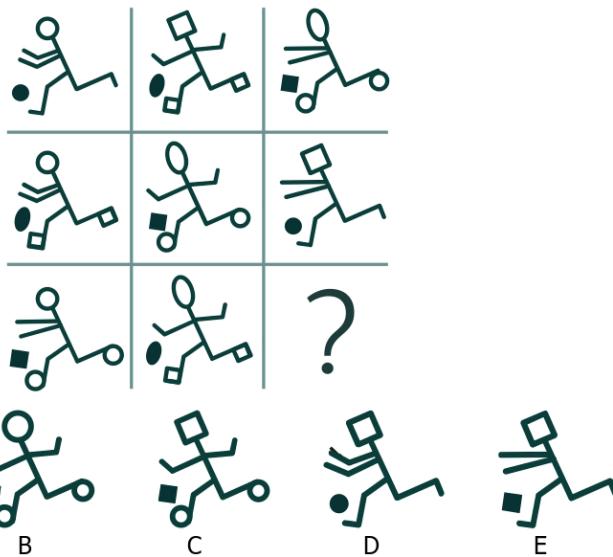
**Solution:**

The same pattern repeats in each row of 3 figures but in different orders as illustrated in the table below:

| Part | Pattern | | |
|---|---|---|---|
| Head | | | |
| Hands | | | |
| Feet | | | |
| Ball | | | |

Thus, the missing figure should be **option D** made of

and .

Answer: **(D)**

## Sample Questions for Kindergarten 2:

### Question 2

Which container below has more water than Container D but less water than Container B?
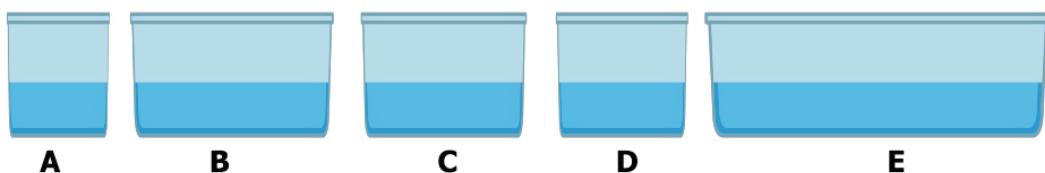


A. Container A
B. Container B
C. Container C
D. Container D
E. Container E

**Solution:**

All the containers have the same water level but different sizes. Therefore, the larger the container, the more the water.

Container C is larger than Container D but smaller than Container B and so, **Container C** has more water than Container D but less water than Container B.

Answer: **(C)**

## Sample Questions for Primary 1/Grades 1:

### Question 1

In the picture below, all the cubes have the same height, and all the books have the same thickness. If the height of the two cubes is 32 cm, find the difference (in cm) between the heights of the cube and the book.
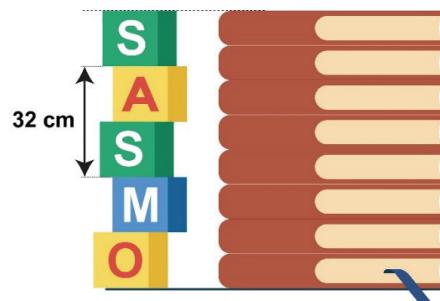


**Solution:**

Since the height of two identical cubes is 32 cm, each cube is $32 \text{ cm} \div 2 = 16 \text{ cm}$ tall.

Total height of 5 identical cubes = Total height of 8 identical books = $16 \text{ cm} \times 5 = 80 \text{ cm}$.

Each book is $80 \text{ cm} \div 8 = 10 \text{ cm}$ tall.

Thus, the difference between the heights of the cube and the book is $16 \text{ cm} - 10 \text{ cm} = \textbf{6 cm}$.

Answer: **6**

## Sample Questions for Primary 1/Grades 1:

**Question 2**

What comes next in the following pattern?



A          B          C

D          E
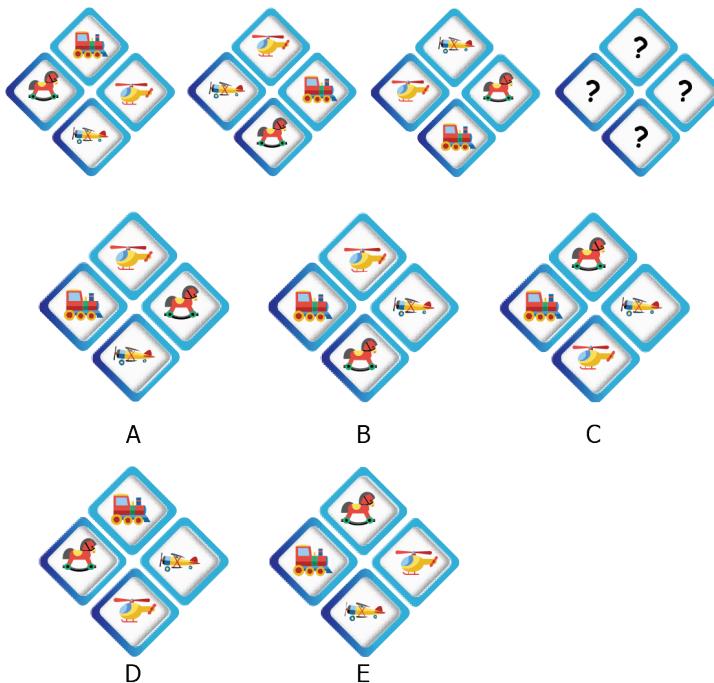
**Solution:**

The pattern is as follows:

 Moves to the next picture in the clockwise direction.

 Moves to the next picture in the anti-clockwise direction.

 Moves to the next picture in the anti-clockwise direction.

 Moves to the next picture in the clockwise direction.

The next picture is **option C** (shown on the right).

Answer: **(C)**

## Sample Questions for Primary 2/Grades 2:

### Question 1

A basket of mangoes weighs 80 grams when full and 60 grams when half full. What is the weight of the basket when it is empty?

**Solution:**

The weight of half basket of mangoes (without the basket) is equal to $80 - 60 = 20$ grams. Therefore, the weight of the basket is equal to $60 - 20 = $ **40 grams**.

Answer: **40**

### Question 2

Dora, Lucas, Richard and Jonathan had a race. Lucas was neither the fastest nor the slowest. Jonathan was faster than Dora. Richard was slower than Lucas. Who was the fastest?

**Solution:**

From the second sentence, we know that Lucas was not the fastest.

From the third sentence, we know that Dora was not the fastest.

From the fourth sentence, we know that Richard was not the fastest.

Therefore, **Jonathan** is the fastest.

Answer: **Jonathan**

## Sample Questions for Primary 3/Grades 3:

**Question 1**

Tony bought 25 candies from a grocery shop. He bought 7 more apple candies than orange candies. He bought 3 more apple candies than grape candies. He bought 2 more pineapple candies than orange candies. How many apple candies did Tony buy?

**Solution:**

Using the Model Method, let the number of orange candies be 1 unit:
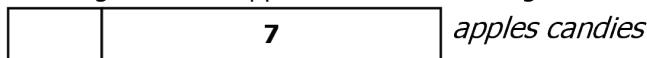
| | *orange candies* |
|---|---|

He bought 7 more apple candies than orange candies:

| | 7 | *apples candies* |
|---|---|---|

He bought 3 more apple candies than grape candies:

| | 4 | *grape candies* |
|---|---|---|

He bought 2 more pineapple candies than orange candies:
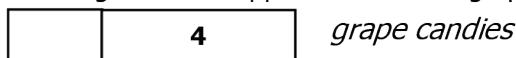
| | 2 | *pineapple candies* |
|---|---|---|
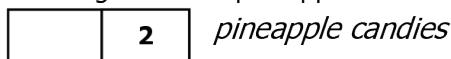
Adding the model diagrams:

4 units $+7 + 4 + 2 = 25$ candies

4 units $+13 = 25$

4 units $= 25 - 13 = 12$

1 unit $= 12 \div 4 = 3$

Apple candies: 1 unit + 7 Candies = 3 + 7 = **10** Candies

Answer: **10**

# Sample Questions for Primary 3/Grades 3:

**Question 2**

Lily, Macy and Ronald are old classmates. During a recent gathering, they told each other about their occupation. Among them, there is a teacher, a doctor and a lawyer.

Below are the hints about their occupations:

Ronald is older than the teacher.

Macy is younger than the lawyer.

The lawyer is younger than Lily.

What is Lily's occupation?

**Solution:**

From the second and third hints, neither Macy nor Lily is the lawyer. Therefore, Ronald is the lawyer.

|        | Teacher | Doctor | Lawyer |
|--------|---------|--------|--------|
| Lily   |         |        | X      |
| Macy   |         |        | X      |
| Ronald |         |        | ✓      |

Since Ronald is the lawyer, he is NOT the teacher or the doctor.

|        | Teacher | Doctor | Lawyer |
|--------|---------|--------|--------|
| Lily   |         |        | X      |
| Macy   |         |        | X      |
| Ronald | X       | X      | ✓      |

Ronald (Lawyer) is younger than Lily and older than the teacher. Hence Lily is not the teacher.

|        | Teacher | Doctor | Lawyer |
|--------|---------|--------|--------|
| Lily   | X       |        | X      |
| Macy   |         |        | X      |
| Ronald | X       | X      | ✓      |

From the last table above, we conclude that Lily is the **doctor**.

<u>Answer:</u> **Doctor**

## Sample Questions for Primary 4/Grades 4:

### Question 1

The bar chart below shows the number of cars sold in Town A in the first half of 2015. All the horizontal lines are equally spaced. The month with the highest number of cars sold and the month with the lowest number of cars sold differ by 60 cars. How many cars were sold in June?
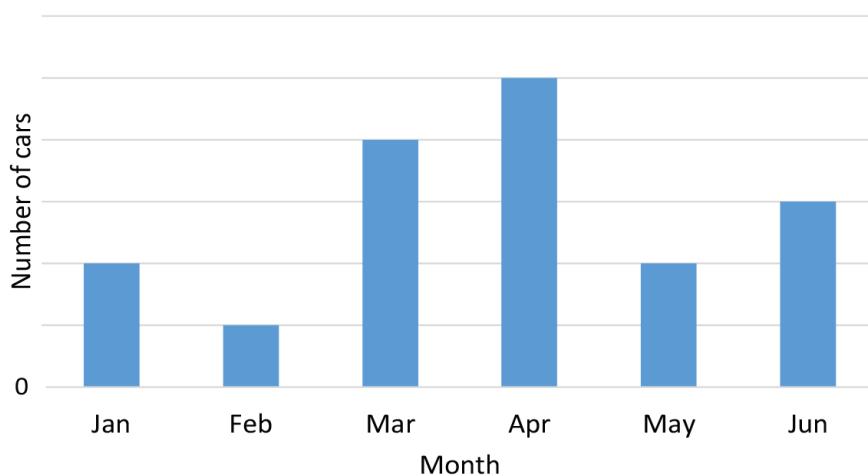


**Solution:**

According to the diagram, there are 1 unit in February and 5 units in April. Since the difference between April and February is 60 cars, each unit represents $60 \div 4 = 15$ cars. In June, $3 \times 15 = \mathbf{45}$ **cars** were sold.

Answer: **45 cars**

## Sample Questions for Primary 4/Grades 4:

### Question 2

Teacher Susan has a certain amount of sweets. If she gives 5 sweets to each student, she will be short of 11 sweets. If she gives 4 sweets to each student, she will have 2 sweets left. How many students are there in the class?

**Solution:**

Using the Model Method, let the number of students be 1 unit.

If she gives 5 sweets to each student, she will be short of 11 sweets. In other words, the amount of sweets Susan has is 11 sweets less than 5 units:

| | | | | 11 |
|---|---|---|---|---|
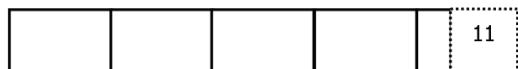
If she gives 4 sweets to each student, she will have 2 sweets left. In other words, the amount of sweets Susan has is 2 sweets and 4 units:

| | | | | 2 |
|---|---|---|---|---|
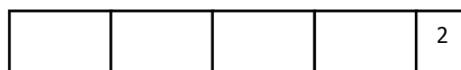
By comparing the two diagrams, we can conclude that

1 unit = 13.

Therefore, there are **13 students** in the class.

Answer: **13 students**

## Sample Questions for Primary 5/Grades 5:

### Question 1

The total number of trading chips of Jefferson, Kelvin and Lean have is 840. After the first round, Lean lost $\frac{1}{2}$ of his trading chips to Jefferson. In the second round, Jefferson lost $\frac{1}{3}$ of his trading chips to Kelvin. As a result, each of them has the same number of trading chips. How many trading chips did Jefferson have in the beginning?

**Solution:**

$840 \div 3 = 280$. Working backwards, we have

|  | Jefferson | Kelvin | Lean |
|---|---|---|---|
| **After the 2ⁿᵈ round** | 280 | 280 | 280 |
| **After the 1ˢᵗ round** | $280 \div 2 \times 3 = 420$ | $280 - (420 \div 3) = 140$ | 280 |
| **Before the 1ˢᵗ round** | $420 - 280 = 140$ | 140 | $280 \times 2 = 560$ |

Therefore, Jefferson had **140** trading chips in the beginning.

Answer: **140**

### Question 2

John and his brother Luke are playing with their dog. John and Luke are at the two ends of a straight road, 5 km apart. They start running towards each other at the same time. John's speed is 15 km/h and Luke's speed is 10 km/h. At the same time, their dog starts running at a constant speed of 20 km/h from John to Luke. Once it reached Luke, it immediately turns and runs back towards John and so on. The dog stops running when John and Luke meet. Find the total distance covered by the dog.

**Solution:**

John and Luke are running towards each other. It will take $5 \div (15 + 10) = 5 \div 25 = 0.2$ hours for them to meet. Given that the dog is running at 20 km/h, it will cover $20 \times 0.2 = 4$ **km** in total.

Answer: **4 km**

# Sample Questions for Primary 6/Grades 6:

### Question 1

In a factory, cans of orange soda are sold in boxes of 9. The price of 1 box is $7. One can of orange soda is given free for every 2 boxes purchased. Five empty cans of orange soda can be exchanged for 1 can of orange soda for free. What is the largest number of cans of orange soda that can be obtained with $35?

**Solution:**

With $35 in hand, we can buy $35 \div 7 = 5$ boxes of orange soda. Four of these 5 boxes can give 2 free cans of orange soda. The total cans so far is $5 \times 9 + 2 = 47$.

Since five empty cans can be exchanged for 1 can and $47 \div 5 = 9 \ Remainder \ 2$, then the total will be $47 + 9 = 56$ cans, in which 9 cans are new and 2 cans are ungrouped.

The 9 new cans together with 1 ungrouped can of orange soda can be exchanged for another $\frac{9+1}{5} = 2$ new cans, and there will be only 1 ungrouped can. New total is $56 + 2 = 58$. The 2 new cans together with 1 ungrouped can of orange soda cannot be exchanged for another new can. Hence, the largest number is **58**.

Answer: **58**

### Question 2

There are only apples and oranges in a basket. The ratio of apples to oranges is 4:3. The ratio of fresh fruits to rotten fruits is 13:2. Given that 45% of the rotten fruits are oranges, what is the percentage of oranges that are rotten?

**Solution:**

Let us construct ratio tables as shown below:

| Apples | Oranges | Total Fruits |
|---|---|---|
| 4 | 3 | 7 |
| $4 \times 15 = 60$ | $3 \times 15 = 45$ | 105 |

| Fresh Fruits | Rotten Fruits | Total Fruits |
|---|---|---|
| 13 | 2 | 15 |
| 91 | 14 | 105 |

Since the number 105 is same in both tables, the ratio unit is same as well.

45% of $14 = \frac{45}{100} \times 14 = 6.3$ units of oranges are rotten

Hence the percentage of oranges that are rotten $= \frac{Rotten \ oranges}{Number \ of \ oranges} = \frac{6.3}{45} = 0.14 =$ **14**%.

Answer: **14**

## Sample Questions for Secondary 1/Grades 7:

**Question 1**

Find the smallest positive integer $n$ for which $250n$ is a multiple of 900.

**Solution:**

The prime factorisation of 900 is $2^2 \times 3^2 \times 5^2$, while that of 250 is $2^1 \times 5^3$.

Therefore, we need the following to be a positive integer:

$$\frac{2^1 \times 5^3 n}{2^2 \times 3^2 \times 5^2}$$

Since $2^2$ cannot evenly divide $2^1$, then $n$ needs to have 2 as its factor. Also, $3^2$ cannot evenly divide $2^1$ or $5^3$, then $n$ must also have $3^2$ as its factor. Therefore, the smallest positive integer value of $n$ is $2 \times 3^2 = \mathbf{18}$.

Answer: **18**

**Question 2**

Determine the sum of the digits in the product of

$$18 \times \underbrace{11\ldots11}_{101\ digits} \times \underbrace{33\ldots33}_{101\ digits}.$$

**Solution:**

$$18 \times \underbrace{11\ldots11}_{101\ digits} \times \underbrace{33\ldots33}_{101\ digits} = 2 \times 9 \times \underbrace{11\ldots11}_{101\ digits} \times \underbrace{33\ldots33}_{101\ digits}$$

$$= 2 \times \underbrace{99\ldots99}_{101\ digits} \times \underbrace{33\ldots33}_{101\ digits} = 2 \times (1\underbrace{00\ldots00}_{101\ zeros} - 1) \times \underbrace{33\ldots33}_{101\ digits}$$

$$= (1\underbrace{00\ldots00}_{101\ zeros} - 1) \times \underbrace{66\ldots66}_{101\ digits} = \left( \underbrace{66\ldots66}_{101\ digits}\underbrace{00\ldots00}_{101\ zeros} - \underbrace{66\ldots66}_{101\ digits} \right) = \underbrace{66\ldots6}_{100\ digits}5\underbrace{33\ldots33}_{100\ digits}4$$

Sum of digits is $6 \times 100 + 5 + 3 \times 100 + 4 = \mathbf{909}$.

Answer: **909**

## Sample Questions for Secondary 2/Grades 8:

**Question 1**

Given that $x^2 - 7x + 1 = 0$, find the value of $x^4 + \frac{1}{x^4}$.

**Solution:**

From the equation $x^2 - 7x + 1 = 0$ we get:

Divide both sides by $x$ $\Rightarrow$ $x - 7 + \frac{1}{x} = 0$ $\Rightarrow$ $x + \frac{1}{x} = 7$

Afterwards, square both sides $\Rightarrow$ $x^2 + 2 + \frac{1}{x^2} = 49 \Rightarrow x^2 + \frac{1}{x^2} = 47$

Square both sides again $\Rightarrow$ $x^4 + 2 + \frac{1}{x^4} = 2209 \Rightarrow x^4 + \frac{1}{x^4} = \mathbf{2207}$

Answer: **2207**

**Question 2**

In quadrilateral ABCD, $\text{BC} = 10\sqrt{3}$ cm and $\text{CD} = 20$ cm. It is given that $\angle\text{ADC} = \angle\text{ABC} = 90^0$ and $\angle\text{BCD} = 5 \times \angle\text{DAB}$. If the area of quadrilateral ABCD is $m\sqrt{3}$ cm$^2$, what is the value of $m$?
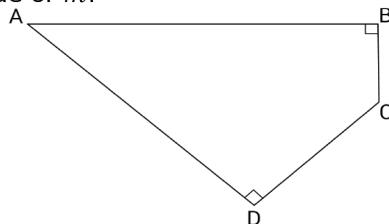


**Solution:**

$\angle\text{DAB} + \angle\text{BCD} = 360^0 - 90^0 - 90^0 = 180^0$. Since $\angle\text{BCD} = 5 \times \angle\text{DAB}$ , then $\angle\text{DAB} = 30^0$ and $\angle\text{BCD} = 150^0$.
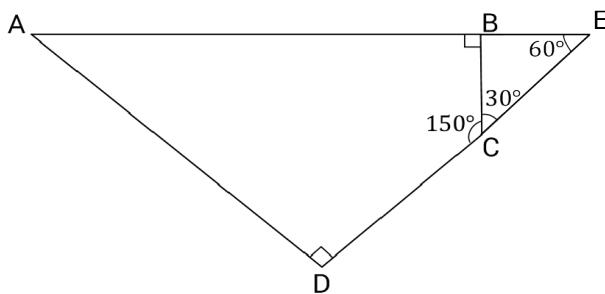


Extend AB and DC until they meet at point E to produce 30-60-90 triangle $\Delta ADE$.

Then, $Area\ of\ ABCD = Area\ of\ \Delta ADE - Area\ of\ \Delta BCE$.

In a 30-60-90 triangle, the ratio of the sides is $1:\sqrt{3}:2$ as shown below.
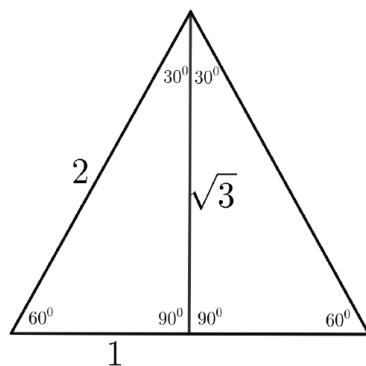


Since $\Delta BCE$ is 30-60-90 triangle, it follows that $BE = \frac{BC}{\sqrt{3}} = 10$ and $CE = 2(BE) = 20$.

Hence, $Area\ of\ \Delta BCE = \frac{10 \times 10\sqrt{3}}{2} = 50\sqrt{3}$ .

In $\Delta ADE$, $DE = CD + CE = 20 + 20 = 40$. Since $\Delta ADE$ is 30-60-90 triangle, then

$AD = \sqrt{3}\ (DE) = 40\sqrt{3}$. Therefore, $Area\ of\ \Delta ADE = \frac{40 \times 40\sqrt{3}}{2} = 800\sqrt{3}$ .

It follows that $Area\ of\ ABCD = 800\sqrt{3} - 50\sqrt{3} = 750\sqrt{3}$ , implying $m = \mathbf{750}$.

<u>Answer:</u> **750**

# SAMPLE QUESTIONS

## Sample Questions for Secondary 3/Grades 9:

### Question 1

Given $x$ and $y$ are positive integers such that $x^2 - 12y^2 + 4xy - 148 = 0$, what is the value of $x^2 + y^2$?

**Solution:**

$$x^2 - 12y^2 + 4xy - 148 = 0$$

$$(x + 6y)(x - 2y) = 148$$

We can notice that $x + 6y$ and $x - 2y$ have same parities and $x - 2y < x + 6y$. Thus,

$$x + 6y = 74$$

$$x - 2y = 2$$

Solving two equations, gives us $x = 20$ and $y = 9$. Hence, $x^2 + y^2 = \mathbf{481}$.

Answer: **481**

### Question 2
Find the value of

$$\frac{21! - 21}{1 \times 1! + 2 \times 2! + 3 \times 3! + \cdots + 19 \times 19!}$$

**Solution:**

$$2! = 1 \times 1! + 1$$

$$3! = 2 \times 2! + 1 \times 1! + 1$$

$$4! = 3 \times 3! + 2 \times 2! + 1 \times 1! + 1$$

By continuing the pattern, it follows that

$$20! = 19 \times 19! + \cdots + 1 \times 1! + 1.$$

Thus, $1 \times 1! + 2 \times 2! + 3 \times 3! + \cdots + 19 \times 19! = 20! - 1$.

Therefore,

$$\frac{21! - 21}{1 \times 1! + 2 \times 2! + 3 \times 3! + \cdots + 19 \times 19!} = \frac{21(20! - 1)}{20! - 1} = \mathbf{21}.$$

Answer: **21**

## Sample Questions for Secondary 4/Grades 10:

### Question 1

Find the sum of all real roots of the following equation.

$$(x - 2)^4 + x^4 = 82$$

**Solution:**

$$(x - 2)^4 + x^4 = 82 \implies 2x^4 - 8x^3 + 24x^2 - 32x - 66 = 0$$

$$\implies x^4 - 4x^3 + 12x^2 - 16x - 33 = 0$$

$$\implies (x + 1)(x^3 - 5x^2 + 17x - 33) = 0$$

$$\implies (x + 1)(x - 3)(x^2 - 2x + 11) = 0$$

The discriminant of $x^2 - 2x + 11$ is $\sqrt{(-2)^2 - 4(1)(11)} = \sqrt{-40}$ , hence its roots are not real numbers. Therefore, the <u>real</u> roots of $(x - 2)^4 + x^4 = 82$ are $-1$ and $3$, which sum up to **2**.

<u>Answer</u>: **2**

### Question 2

The diagram below shows an equilateral triangle $ABC$. If point $P$ is inside $\triangle ABC$, and its distance from $A, B, C$ is $5\ cm, 12\ cm, 13\ cm$, respectively, find $\angle APB$.
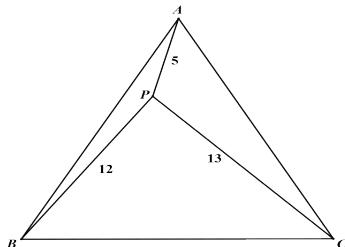


**Solution:**

Rotate triangle ABC about B such that the new position of C is the original position of A. Let P', C', A' be the new position of P, C, A, respectively. (Note that A and C' coincide). Observe that PBP' is 60 degrees. As BP'=BP=12, then triangle PBP' is an equilateral triangle, and so BPP' is 60 degrees. Now, triangle APP' (or C'PP') is 5-12-13 triangle. Hence, APP' is 90 degrees. It follows that APB is 60+90=**150 degrees**.
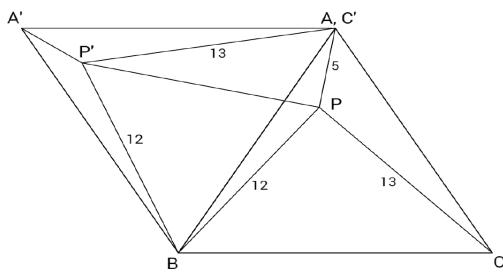


<u>Answer</u>: **150**

## Sample Questions for Junior College 1 and 2/Grades 11 and 12:

**Question 1**

A standard dice is rolled twice and the rolled numbers are recorded as $x$ and $y$.
What is the probability that the $x, y$ and $5$ are the 3 sides of an isosceles triangle?

    A. $\frac{11}{36}$

    B. $\frac{13}{36}$

    C. $\frac{5}{18}$

    D. $\frac{7}{18}$

    E. None of the above

**Solution:**

Case 1: $x = y$

There are 6 such pairs of $(x, y)$:

$$(1,1), (2, 2), (3, 3), (4, 4), (5, 5), (6,6).$$

However, pairs $(1,1)$ and $(2,2)$ do not satisfy the triangle inequality as $1 + 1 < 5$ and $2 + 2 < 5$.

There are 4 pairs for Case 1.

Case 2: $x \neq y$

There are 10 such pairs of $(x, y)$:

$$(5,1), (5, 2), (5, 3), (5, 4), (5,6), (1,5), (2, 5), (3, 5), (4, 5), (6,5)$$

All of the pairs satisfy the triangle inequality.

The probability that the $x, y$ and $5$ are the 3 sides of an isosceles triangle is

$$\frac{4 + 10}{6 \times 6} = \frac{14}{36} = \mathbf{\frac{7}{18}}.$$

Answer: **(D)**

## Sample Questions for Junior College 1 and 2/Grades 11 and 12:

### Question 2

It is given that $2\cot(2x) + \frac{1}{\sin x \cos x} = \frac{1}{2}$, where $0 < x < \frac{\pi}{2}$. Find the value of $\left(\frac{1}{\sin x \cos x} - 2\cot(2x)\right)$.

**Solution:**

$$2\frac{\cos 2x}{\sin 2x} + \frac{1}{\sin x \cos x} = \frac{1}{2}$$

$$2\frac{\cos 2x}{2\sin x \cos x} + \frac{1}{\sin x \cos x} = \frac{1}{2}$$

$$\frac{\cos 2x + 1}{\sin x \cos x} = \frac{1}{2}$$

$$\frac{2\cos^2 x - 1 + 1}{\sin x \cos x} = \frac{1}{2}$$

$$\frac{\cos^2 x}{\sin x \cos x} = \frac{1}{4}$$

$$\frac{\cos x}{\sin x} = \frac{1}{4}$$

$$\frac{1}{\sin x \cos x} - 2\cot(2x) = \frac{1}{\sin x \cos x} - 2\frac{\cos 2x}{2\sin x \cos x} = \frac{1 - \cos 2x}{\sin x \cos x} = \frac{2\sin^2 x}{\sin x \cos x} = \frac{2\sin x}{\cos x}$$

$$= 2 \div \frac{\cos x}{\sin x} = \mathbf{8}$$

<u>Answer</u>: **8**

# REGISTRATION INFORMATION

## COMPETITION DATE:
**Set by Country Council Partner**

## REGISTRATION FEE:
**Set by Country Council Partner**

## PLATFORM:
**Online OR Paper**

## FREE SASMO LMS

Upon successful registration for **SASMO 2026**, students will receive c**omplimentary access to the SASMO Learning Management System (LMS) starting from 1 February 2026,** which includes the **official contest papers from the past three years (2023, 2024, and 2025) together with the answer keys** for practice and preparation.

## HOW TO REGISTER?

Kindly check with your country partner for registration and competition details. For more information about your country partner, please refer to our website at https://simcc.org/countries/

## REFUND POLICY:

The contest fees paid by students to the competition are non-refundable. To host the competition, our organization invests a significant amount of time and resources, not to mention the various charges incurred to process the payments and registration.

As a social enterprise, SIMCC operates with a very lean team and limited resources to keep our operating costs low in order to make our competition affordable to all students. Hence, we will not be able to offer any refunds for competition fees to students who withdraw or cancel beyond our control.

If any student has been wrongly charged by SIMCC, or we cancel an event due to reasons beyond our control, we will happily refund the fees paid by the students.

# SASMO, SMKC 2026 – Math Olympiad Preparation Classes International

**For country that requires SIMCC to provide trainings for their students, please refer to the schedule below:**

| Time Slot (Singapore Time) | Class/Level | Dates |
|---|---|---|
| 9am to 10.45am | Primary 1 (Grade 1) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 5.15 pm to 7 pm | Primary 2 (Grade 2) ONLINE | Fri: Jan 23, 30 \| Feb 6, 13, 27 \| Mar 6, 13, 20, 27 |
| 9am to 10.45am | Primary 2 (Grade 2) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 5.15 pm to 7 pm | Primary 2 (Grade 2) ONLINE | Tue: Jan 20, 27 \| Feb 3, 10, 24 \| Mar 3, 10, 17, 24 |
| 1.15pm to 3pm | Primary 3 (Grade 3) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 11am to 12.45pm | Primary 3 (Grade 3) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 5.15 pm to 7 pm | Primary 3 (Grade 3) ONLINE | Thu: Jan 22, 29 \| Feb 5, 12, 26 \| Mar 5, 12, 19, 26 |
| 11am to 12.45pm | Primary 4 (Grade 4) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 5.15 pm to 7 pm | Primary 4 (Grade 4) ONLINE | Wed: Jan 21, 28 \| Feb 4, 11, 25 \| Mar 4, 11, 18, 25 |
| 5.15 pm to 7 pm | Primary 5 (Grade 5) ONLINE | Fri: Jan 23, 30 \| Feb 6, 13, 27 \| Mar 6, 13, 20, 27 |
| 11am to 12.45pm | Primary 5 (Grade 5) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 3.15pm to 5pm | Primary 5 (Grade 5) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 7.15 pm to 9 pm | Primary 6 (Grade 6) ONLINE | Fri: Jan 23, 30 \| Feb 6, 13, 27 \| Mar 6, 13, 20, 27 |
| 7.15 pm to 9 pm | Primary 6 (Grade 6) ONLINE | Tue: Jan 20, 27 \| Feb 3, 10, 24 \| Mar 3, 10, 17, 24 |
| 9am to 10.45am | Secondary 1/2 (Grade 7/8) ONLINE | Sat: Jan 24, 31 \| Feb 7, 14, 28 \| Mar 7, 14, 21, 28 |
| 7.15 pm to 9 pm | Secondary 1/2 (Grade 7/8) ONLINE | Thu: Jan 22, 29 \| Feb 5, 12, 26 \| Mar 5, 12, 19, 26 |
| 7.15 pm to 9 pm | Secondary 3/4 (Grade 9/10) ONLINE | Fri: Jan 23, 30 \| Feb 6, 13, 27 \| Mar 6, 13, 20, 27 |
| 7.15 pm to 9 pm | Secondary 3/4 (Grade 9/10) ONLINE | Wed: Jan 21, 28 \| Feb 4, 11, 25 \| Mar 4, 11, 18, 25 |

1. Lesson details and registration instuctions are on the next pages.

# About Our Training

Students will be taught 9 **important topics** covered in the SASMO and SMKC contest. Each topic is carefully designed to develop essential skills, including:

- **Pattern Recognition**
- **Reasoning Skills**
- **Problem-Solving Techniques**

Every lesson focuses on a different topic, where students solve and learn various methods to tackle questions within that topic. Teachers begin by explaining the key concepts of the topic to ensure a strong foundation. After attempting the questions, teachers explain the strategies and solving methods step-by-step. Attempting the questions is an important part of the learning process, helping students develop critical thinking and confidence. This structured approach ensures students are well-prepared for competitions.

## 1. My child does not have enough experience in math competitions. Will this workshop benefit him?

Yes! The SIMCC workshop is designed to build a strong foundation for general math Olympiads. Many of our past students have shown remarkable improvement and achieved top ranks in competitions like SASMO, SMKC, SIMOC, AMC, NMOS, SMOPS, SMO, AMO and IJMO. For example, Sarah, a Primary 5 student, went from having no prior experience to earning a Silver award after attending our workshop. This success story highlights the effectiveness of our structured training approach. By the end of the course, your child will gain a clearer understanding of how to approach and solve math Olympiad questions effectively.

## 2. How will the online lessons be conducted?

Lessons will be conducted virtually via the **Zoom Video Application**. Lesson notes will be sent via email **2 days before** the scheduled lesson date, allowing parents to print the notes in advance. During the lesson, students are expected to complete the worksheets in real-time so that teachers can assess their progress, identify difficulties, and provide tailored guidance. This interactive approach ensures that students receive immediate feedback and support.

We **recommend that students wait to attempt the questions during the lesson**, as the worksheets are specifically designed for real-time evaluation. Working through the questions during the session allows teachers to provide proper guidance, address difficulties, and ensure a more effective learning experience.

## 3. What should my child prepare for the lesson?

- Download and print the lesson notes, which will be provided 2 days before the lesson.
- Ensure a stable internet connection and have the Zoom application ready for the session.

## 4. Are these 10 lessons enough to prepare them for a competition?

Performance in competitions depends on various factors, including guided preparation.

Our 10-lesson training workshop provides a focused and effective approach, significantly

improving your child's chances of achieving a higher score in math competitions, **DSA**, or

selection tests.

## 5. Can my child attend a make-up class?

- Students can make up a class if the same lesson is available within the same week.
- Parents must email **training@simcc.org** to check for availability.
- Please note: There will be **no make-up lessons for late registrations**.
- If a student misses lessons and cannot make up, we will share a **recording for up to 2 lessons** for a limited time.

## 6. Who are the teachers for the classes?

Our instructors are highly experienced, with many holding advanced degrees in mathematics and education. They have successfully trained students to achieve top ranks in prestigious competitions like SASMO, AMO, and other international math Olympiads. Some of our trainers teach in around **10 Singapore schools annually** and have done so consistently for the past **6 years**. Their proven track record and dedication ensure that every student receives the best possible preparation.

## 7. What is the expected outcome of this training?

By the end of the training, students will have a solid foundation in key math Olympiad topics, enhanced problem-solving skills, and improved confidence to tackle competition questions. This program not only prepares students for upcoming competitions but also equips them with lifelong critical thinking and reasoning abilities.

## 8. How to register and pay for the classes?

1. To register, please contact our **SIMCC Country Council Partner (CCP)** in your country, https://simcc.org/country-partners/ and they will take your training request and sign you with SIMCC.
2. Next, create a student account at https://form.simcc.org/. Follow the instructions on the homepage and create a membership.
3. Once you have created a student membership, you can signup for SIMCC past year contest papers (limited to1 to 2 years for free).

# INTERNATIONAL JUNIOR HONOR SOCIETY

"LEADERS GIVE, GIVERS GROW!"

**1**

IJHS is an honor society that focuses on developing leaders and enabling its members to achieve success in academic and life pursuits. IJHS provides its members with a variety of platforms and opportunities to unleash their full potential, as well as connect to their community.

IJHS is fully funded by Scholastic Trust Singapore (STS), a non-profit foundation, and supported by a prominent volunteer board of advisors to help guide bright young leaders.

**2**

**About IJHS:**
Vision: a strong community of compassionate leaders.
Values: humility, empathy, adaptability, resolute, truthfulness.

**Goals:**
· Unlock the potential, talents, passions, and interests of aspiring Fellows
· Empower young leaders to give back to their local and global communities
· Pave the way for members to gain entry into top schools and qualify for scholarships
· Provide top institutions' admission and scholarship coaching to high achievers
· Make the world a better place.

**3 — Why Should You Join IJHS?**

| | | | | | |
|---|---|---|---|---|---|
| Access to a global network of like-minded Leaders and Givers. | Expert guidance on how to gain entrance into renowned educational institutions/universities with scholarship. | Apply for Ranger Scholarships to be trained as trainers of vocational skills and strengthen your portfolio. | Important internship opportunities where members can explore a variety of career options while enhancing their leadership skills and admission/scholarships at top universities. | Myriad resources and support to enable members to contribute back to their community. | Mentorship to assist members in qualifying for prestigious scholarships. |

**4**

**How to earn IJHS SPs?**
Students earn IJHS Scholarship points (SPs) by winning awards in SIMCC competitions. There are 3 levels of SIMCC competitions with different SPs.

| Individual Contest | National Assesment | National Contest | Global Final Online | Global Final |
|---|---|---|---|---|
| Perfect Score | 1.5 | 3 | 3.5 | 4 |
| Gold Awards | 1 | 2 | 2.5 | 3 |
| Silver Awards | 0.5 | 1 | 1.5 | 2 |
| Bronze Awards | 0.25 | 0.5 | 0.75 | 1 |
| Honorabe Mention | 0.15 | 0.25 | 0.35 | 0.5 |

| Team Contest | VIJSO | IJCO | IJIO | SIMOC | MMT |
|---|---|---|---|---|---|
| Gold Awards | 2 | 2 | 2 | 1 | 0.5 |
| Silver Awards | 1 | 1 | 1 | 0.5 | 0.25 |
| Bronze Awards | 0.5 | 0.5 | 0.5 | 0.25 | 0.125 |

**5 — IJHS Membership Levels**

**01 Junior**
1st year Entry
1 year membership

**02 Senior**
2nd Entry
1 year membership

**03 Lifetime**
3rd Entry Lifetime membership, tracked by LT Year # with LT Year 10 being the highest honor

**04 Honorary Lifetime**
Special membership award for those who contribute to the society

# YALA Scholarships

**Every member of IJHS (grades 3 and above) will automatically receive a silver scholarship to join the YALA Camp every year.**

There are 4 levels of scholarships based on IJHS Scholarship Points (SPs).
1. **Platinum Scholarship (100%)**
2. **Palladium Scholarship (75%)**
   **New class of scholarships for IJHS members to apply for YALA scholarships**
3. **Gold Scholarship (50%)**
4. **Silver Scholarship (30%)**
   **Open to all IJHS members to apply**

IJHS
INTERNATIONAL JUNIOR HONOR SOCIETY

**Gained >= 4 IJHS SPs**

**Member of IJHS**

**Earn more ISPs**

**Improve portfolio and get more scholarship**

**Young Achievers Leadership Academy (YALA) Camp**
YALA is a 5-day live-in leadership and personal development workshop for top students from Grade 3 to Grade 12. YALA is specially designed to empower these scholars to reach their highest life goals, including enabling them to gain admission to stop school and universities. At the same time, YALA helps develop students' leadership skills and provides them with opportunities to contribute to society in meaningful ways.

# S²LSP

## SOAR
### *Helping the needy*
**Sharing Opportunities, Achieving Recognition**

# Social Equity/Needy Students – Free entry to SIMCC Competitions

Our top USG experts will support SOAR students to determine the highest yield valued extra-curricular activities and how to maximize their choices to best demonstrate their skills to create their brand and express their unique personality for their university applications

Our goal is to help these students SOAR over an increasingly competitive application crowd — making sure they strengthen their portfolio to gain admission to top universities with scholarships.

**Projects under IJHS**
CSPs (Community Service Projects) are innovative projects focused on serving the community. They range from technology to social work and can be proposed by anyone with a vision to achieve. The CSP committee is responsible for supporting and managing your CSPs. We provide you with guidance and manpower to make your ideas into a reality. Check out some of our completed CSPs down below!

## Support for poor and disadvantaged Students

**More support for Girls of SIMCC**

**SOAR**
*Helping the needy*
Sharing Opportunities, Achieving Recognition

**Ultimate Goal**
Best–fit university with scholarship

**Step 1: SOAR**
5% of enrolment free for needy students in local contests

**Step 2**
SOAR students wins silver in SASMO/AMO

**Step 3**
SIMCC/CCP sponsors free Online Global Finals

**Step 4**
Student with highest IJHS Scholarship Points selected

**Step 5**
Student is invited for SIMOC in Singapore

**Step 6**
UGS Support SOAR

SIMCC & CCPs
(CCP: Country Council Partner)

Fore more information visit our website: **https://simcc.org/**

ACQUIRE SKILLS, RECOGNITION, AND SCHOLARSHIPS FOR SUCCESS

SINGAPORE INTERNATIONAL MASTERY CONTESTS CENTER

**SIMCC**

SIMCC reserves the right to make any and all changes to the Info pack at its sole discretion without notice to You.