

Singapore Mathematical Competitions 2007

Every year, Singapore Mathematical Society organizes Singapore Mathematical Olympiads and Singapore Project Festival. Singapore Project Festival was held in March 2007 while the three Mathematical Olympiads competitions were held in June 2007.

The Singapore Mathematics Project Festival 2007 had received about 60 projects. Five teams each from the Junior and Senior Sections were invited to the Festival Congress held at River Valley High School on 17 March 2007. Over three hundred teachers and students from various secondary schools attended the Festival Congress. After the project presentation, the teams were interviewed by the judges to probe further into their understanding of the project material. The judges for the Festival were Dr. Tang Wee Kee, (NIE), Dr. Toh Tin Lam (NIE) and A/P Zhao Dongsheng (NIE) for the Senior Section; A/P Helmer Aslaksen (NUS), A/P Chew Tuan Seng (NUS) and A/P Tay Tiong Seng (NUS) for the Junior Section.

The Singapore Mathematical Society (SMS) has organised the Singapore Mathematical Olympiad (SMO) annually since the 1950s. It is the largest and oldest mathematics competition in Singapore. Over the last few years, with the Department of Mathematics, National University of Singapore, as co-organiser, the SMO has seen a significant expansion. A total of 9782 students from 136 secondary schools and junior colleges took part in the SMO.

The details of the three competitions are as follows:

The Singapore Mathematical Olympiad (Junior Section) for secondary school students up to age 14;

The Singapore Mathematical Olympiad (Senior Section) for all secondary school students up to the age of 16;

The Singapore Mathematical Olympiad (Open Section) for all secondary school and junior college students.

Team and individual cash prizes are awarded in addition to Gold, Silver, Bronze and Honourable Mention awards. We aim to make the SMO measure the mathematical proficiency of the students, and the Gold, Silver, Bronze and Honourable Mention certificates are awarded to students who meet set criteria that are dependent on the level of difficulty of the competition.

The Prize Presentation Ceremony was held at NUS High School of Mathematics and Science on Saturday, 8 September 2007. The Guest-of-Honour was Prof Tan Eng Chye, provost of NUS.

The Society expresses its sincere gratitude to River Valley High School and NUS High School of Mathematics and Science for allowing the use of its facilities to host the Festival Congress and the Prize Presentation Ceremony respectively. We would also like to thank the teacher subcommittee at River Valley High School who did a wonderful job of organizing the Festival Congress, the judges for their time and effort, and to all the participating teams, supervising teachers and their school for the support they shown to the Festival.

Finally, we would also like to thank Ministry of Education for supporting the Festival Congress and Singapore Mathematical Olympiads.



Prof Tan Eng Chye, provost of NUS.

The Mathematical Competition Subcommittee consisted of

Chairman —
A/P Helmer Aslaksen

Deputy Chairman/Administration —
Mr Hang Kim Hoo

Junior Section Coordinator —
A/P Yang Yue

Senior Section Coordinator —
Dr Toh Tin Lam

Open Section Coordinator —
Dr Roger Poh

Special Rounds Coordinator —
A/P Tay Tiong Seng

Special Rounds Coordinator —
Ms Chan Lai Chee

IT Coordinator
Mr Melvin Soh

A/P Chew Tuan Seng
A/P Chua Seng Kee
A/P Denny Leung Ho Hon
Dr Wong Yan Loi
Dr Lee Tuo Yeong
A/P To Wing Keung
Dr Dong Fengming
Mr Ho Foo Him
Mr Wang Fei
Mr Chua Boon Liang

Results of Singapore Mathematical Project Festival 2007



Senior Section Winner

Singapore Mathematical Society Shield, Gold Award, Foo Kean Pew Memorial Prize (Senior Section) Hwa Chong Institution

Project Title: *Phizzy Cola*

Participants: Lu Yongquan, Lee Jian Le, Lim Jia Wei Supervisor: Miss Gwee Hwee Ngee

Silver Raffles Institution Project Title: *An Investigative Project on whether the M/M/1/GD/8/8*

Queuing Model fits the McDonald's Outlet in Junction 8, Singapore Participants: Goh Wei Zhong, Lim Kai Jie Shawn, Royce Yap Ze Yong Supervisor: Mr Fong Chang Chong Raymond

Bronze Hwa Chong Institution Project Title: *The Route of Shooting a Basketball*

Participants: Zhu Yechao, Wang Huasheng, Song Boyang, Zhang Ziguang Supervisor: Mrs Ooi Teong Lin

Bronze NUS High School of Mathematics and Science Project Title: *Mathematics Behind Monopoly*

Participants: Royston Tan, Kegan Ang, Theophilus Teo, Altron Lee Supervisor: Mr Chai Ming Huang

Bronze Raffles Institution Project Title: *Forecasting of COE & Petrol Prices*

Participants: Yeong Li Qian, Chua Chin Hock Nelson Supervisor: Mr Fong Chang Chong Raymond

Bronze River Valley High School Project Title: *50:50 or 51:49 ?*

Participants: Cui Naisheng, Liu Yi, Zhang Qianru Supervisor: Mr Ang Mia Lee

Honorable Mention Bowen Secondary School Project Title: *Exploring Vedic Mathematics*

Participants: Cheah Kit Weng, Saravanan Gunaseelam, Kenwick Kor Chin Yew, Koh Poo Kwee Supervisor: Mrs Padma Ramachandran

Honorable Mention Hua Yi Secondary School Project Title: *Our Fractalogy*

Participants: Goh Jin Wen, Lau Wei Cheng, Kevin Neo Rui Hao, Peh Wei Jie Supervisor: Mr Ong Ka Ming

Honorable Mention North Vista Secondary School Project Title: *Magic Stars*

Participants: Chan Heng Tiong, Chong Zu Ming, Lim Yuan Jie, Tan Ming Teck Simon Supervisor: Mr Tan Ken Jin

Honorable Mention Raffles Girls' School (Secondary) Project Title: *Code Brushes*

Participants: Tay Wei Fen Supervisor: Mrs Ban Soh Lian

Honorable Mention Raffles Girls' School (Secondary) Project Title: *Driving Speeds on newly surfaced roads*

Participants: Teo Su Wen, Cheryl, Yap Zhi Min Supervisor: Mrs Ban Soh Lian

Honorable Mention Xinmin Secondary School Project Title: *Instant Insanity*

Participants: Liang Xu, Shao Chen, He Chunyun, Xiao Qingyu Supervisor: Mrs Rosemary Song

Singapore Mathematical Society Shield, Gold Award, Foo Kean Pew Memorial Prize (Junior Section) Hwa Chong Institution

Project Title: *Discrete Mathematics in the game of SET®*

Participants: Li Tiansheng, Khu Boon Hon Derek, Xu Jiakun

Supervisor: Miss Gwee Hwee Ngee

Gold, Special Prize in Overall Presentation Raffles Girls' School

Project Title: *Arithmetic Mean, Geometric Mean, and Square Roots*

Mr Kenneth Lui Supervisor: Dr Spario Soon

Silver, Special Prize in Creativity and Originality Nanyang Girls' High School

Project Title: *Stitching Bridges*

Yeo Ting Hui Supervisor: Mr Tan Kuo Chean

Silver Hwa Chong Institution Project Title: *Bobby's Carrot*

Participants: Chua Wang Zhi, Chen Yuan Xi, Koh Zhan Wei Aaron, Tan Yen Seow

Supervisor: Mr Ang Lai Chiang

Bronze Methodist Girls' School Project Title: *Banking Bonanza*

Participants: Chen Shu Wen Nicole, Chua Wen Hui Sarah, Hew Jia Ni, Tan Ee Leng Supervisor: Miss Ho Wai Mun

Bronze, Special Prize in Applicability and Relevance River Valley High School Project Title: *Animal Farm*

Participants: Gu Tian Yu Gary, Tan Jing Yi, Ong Wei Shuihan Wilson Supervisor: Mr Loke Jee Wah

Bronze St. Andrews Secondary School Project Title: *Pigeon-laneous and Fibo-licious-ness Numbers*

Participants: Ronald Liong Kun Han, Aaron Chua Wei Jie, Bryan James Wong Zhi Wei, Jasper Kim Jia Cun Supervisor: Mrs. Yeo See Wan

Honorable Mention CHIJ St. Nicholas Girls' School Project Title: *Now You See It, Now You Don't*

Participants: Goh Wei Leng, Dee Jia Yi, Makle Ting Amanda, Jordana Tan Yan Ting Supervisor: Mr. Tan Chee Keong Clement

Honorable Mention Methodist Girls' School Project Title: *Fractal Frenzy*

Participants: Grace Chan, Maisie Koh, Joanne Ong, Grace Fong Supervisor: Mrs. Grace Poh



Junior Section Winner

Senior

Junior

Results of Singapore Mathematical Project Festival 2007

Honorable Mention Nanyang Girls' High School Project Title: *Excursions into Pick's Theorem*
 Participants: Hee Jia Yun, Lee Hui Yi, Lee Ping Yi Marsha, Su Gi Chandran Supervisor: Mr Tan Kuo Chean

Honorable Mention NUS High School of Mathematics and Science Project Title: *The Simplex Lock*
 Participants: Gabriel Wong Ying Lin, Goh Jun Le, Koh Zhiwen Sidwyn, Ong Yi Pin Joshua Supervisor: Mr. Kevin John Koh

Honorable Mention NUS High School of Mathematics and Science Project Title: *RSA in Visual C#*
 Participants: Cheh Carmen Supervisor: Mr. Kevin John Koh

Honorable Mention Raffles Institution Project Title: *The Simplex Lock*
 Participants: Brian Ho Tze Yew, Lum Jian Yang, Sia Jia Rui Jeremy Supervisor: Mr. Mustafa Ali

Honorable Mention Xinmin Secondary School Project Title: *Die Turn-ers*
 Participants: Cheng Shi Hui, Li Cai Jia, Lee Yong Qing, Mok Yong Soon Supervisor: Miss Yak Hiok Woo

Junior

Results of Singapore Mathematical Olympiads 2007

Junior

Top 20 Team Ranking for SMO (Junior)

Rank	Name of School
1	Raffles Institution
2	Raffles Girls' School (Secondary)
3	Hwa Chong Institution
4	NUS High School of Mathematics and Science
5	Anglo-Chinese School (Independent)
6	Dunman High School
7	Catholic High School
7	St Joseph 's Institution
9	Chung Cheng High School (Main)
9	River Valley High School
11	Bukit Panjang Govt High School
11	Nanyang Girls' High School
13	Nan Hua High School
14	Anderson Secondary School
14	Commonwealth Secondary School
14	Ngee Ann Secondary School
14	St Andrew's Secondary School
18	Hwa Chong International School
18	Victoria School
20	Bedok Green Secondary School
20	Tanjong Katong Secondary School

Top 30 Individual Ranking for SMO (Junior)

Rank	Name	School
1	KANG ZI YANG	Raffles Institution
2	CHAN JUN NENG RYAN	NUS High School of Mathematics and Science
3	ANG YAN SHENG	NUS High School of Mathematics and Science
4	ALAN AW JIN	Raffles Institution
5	ANG KUN JOO MICHAEL	NUS High School of Mathematics and Science
6	LI YAO'AN	Raffles Institution
7	KOH JING XUAN	Raffles Institution
8	LIM JECK	Queenstown Primary School
9	ZHANG AIDI	Raffles Girls' School (Secondary)
10	LIN WAYNE	NUS High School of Mathematics and Science
11	LIM CHERN YUEN	Hwa Chong Institution
12	TAN FU NAN	NUS High School of Mathematics and Science
13	CHIONH KAI WEN KEVEN	Raffles Institution
14	HANG ZI KAI	NUS High School of Mathematics and Science
15	KE YUXUAN	Raffles Institution
15	LONG JIRUI WELRAS	Raffles Institution
17	ZHANG MENGSHI	Raffles Girls' School (Secondary)
18	PETER HAW HAN BENG	Hwa Chong Institution
19	WANG XUEZHOU	Raffles Institution
20	SHI FANGYING	Raffles Girls' School (Secondary)
20	KOR CHONG LUCK RYAN	Raffles Institution
22	TAN RUN XIAN	Hwa Chong Institution
23	THNG REN ZHI CHRISTOPHER	NUS High School of Mathematics and Science
24	H'NG ENG KEAT	Hwa Chong Institution
25	ZHANG JUNYU	Raffles Girls' School (Secondary)
25	NATHANAEL WONG ZHIXIN	Raffles Institution
27	TAN XUE-LING JOYCE	Raffles Girls' School (Secondary)
28	KUAN SHENG LONG JASPER	Raffles Institution
28	HUANG YIHENG	Raffles Institution
30	QUEK YIHUI	NUS High School of Mathematics and Science
30	CHENG HERNG YI	NUS High School of Mathematics and Science
30	DING YUE	Raffles Institution

Senior

Top 20 Team Ranking for SMO (Senior)

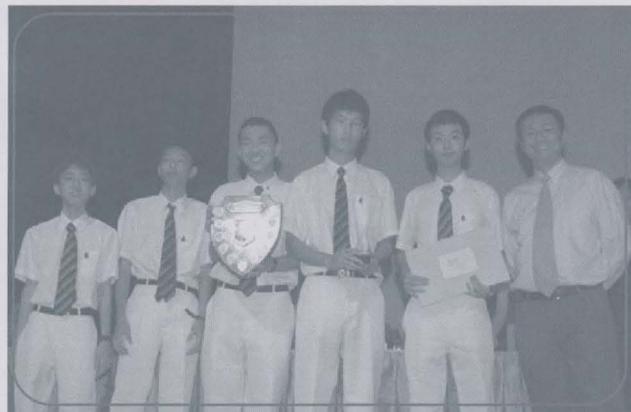
Rank	Name of School
1	Raffles Institution
2	Hwa Chong Institution
3	Nanyang Girls' High School
3	River Valley High School
5	Raffles Girls' School (Secondary)
6	Anglo-Chinese School (Independent)
6	Maris Stella High School
8	Dunman High School
9	Catholic High School
10	Zhonghua Secondary School
11	NUS High School of Mathematics and Science
12	National Junior College
13	Victoria School
14	St Joseph 's Institution
15	Cedar Girls' Secondary School
16	Anderson Secondary School
17	Crescent Girls' School
18	Bukit Panjang Govt High School
18	Hwa Chong International School
18	Singapore Chinese Girls' School

Top 30 Individual Ranking for SMO (Senior)

Rank	Name	School
1	CAO LUU QUANG	National Junior College
2	TRAN ANH SON	Anglo-Chinese School (Independent)
3	HE SHI	Raffles Institution
4	WAN MOQUAN	River Valley High School
5	LIU SHIJIE	Hwa Chong Institution
6	ZONG GUO	River Valley High School
7	NGUYEN THUY HUNG	Anglo-Chinese School (Independent)
8	CHIAM JIA-HAN	Raffles Institution
9	JI XIN SHI	River Valley High School
10	LOH YAO CHEN IVAN	Raffles Institution
11	ZHANG LIANG	Raffles Institution
12	HAN XIAOXIAO	Hwa Chong Institution
13	GOH JUN LE	NUS High School of Mathematics and Science
14	HOW PENG HUI	Nanyang Girls' High School
15	NGUYEN NGOC LAN	Anglo-Chinese School (Independent)
16	GABRIEL WONG YING LIN	NUS High School of Mathematics and Science
17	PHAM HOANG LINH	Raffles Institution
18	NGUYEN VIET ANH	Hwa Chong Institution
19	TANG QUANHAO	Maris Stella High School
20	WANG LIJUN	Anglo-Chinese School (Independent)
20	WU LIUKUN	Nanyang Girls' High School
20	TRUONG TUAN QUOC	St Joseph 's Institution
23	YE YUSHI	Raffles Institution
24	WANG CHANG TIAN	Hwa Chong Institution
24	TANG HUIYAO	Raffles Institution
26	SONG ZHIWEI	Raffles Institution
27	DANG AN SON	NUS High School of Mathematics and Science
28	FU RONG	Zhonghua Secondary School
29	SHENG CHAO	Hwa Chong Institution
29	SHEN WEIWEI	River Valley High School
29	YUEN SHEUNG MAN	Victoria School



**Singapore Mathematical Olympiads 2007
Junior Section Team Winner**



**Singapore Mathematical Olympiads 2007
Senior Section Team Winner**

Open

Top 10 Team Ranking for SMO (Open)

Rank	Name of School
1	Hwa Chong Institution
2	Raffles Junior College
3	Raffles Institution
3	Victoria Junior College
5	Anglo-Chinese School (Independent)
6	Nanyang Girls' High School
6	Raffles Girls' School (Secondary)
8	National Junior College
9	NUS High School of Mathematics and Science
10	River Valley High School

Top 30 Individual Ranking for SMO (Open)

Rank	Name	School
1	WANG TENG YAO	Hwa Chong Institution
2	CHIAM JIA-HAN	Raffles Institution
3	LOKE GAR GOEI	Raffles Junior College
4	LIM WEI QUAN	Hwa Chong Institution
5	HANG HAO CHUIEN	Hwa Chong Institution
6	HE CHI	Raffles Institution
7	NGUYEN DANG MINH	Anglo-Chinese School (Independent)
8	YU SIQING	Hwa Chong Institution
9	ZHU YE CHAO	Hwa Chong Institution
10	CHEN LINGHAO	Hwa Chong Institution
11	SUO CHENQU	Hwa Chong Institution
12	LE VIET ANH	Anglo-Chinese School (Independent)
13	XU ZHIPING	Raffles Girls' School (Secondary)
14	BRYAN HOOI KUEN-YEW	Anglo-Chinese School (Independent)
15	LIU SHIJIE	Hwa Chong Institution
16	LI SHUN JI	Raffles Junior College
17	LONG XUEPING	Raffles Junior College
18	DAI ZHONGHUAN	Hwa Chong Institution
19	NGUYEN TRUNG QUAN	Anglo-Chinese School (Independent)
19	TAN JUANHE	Raffles Junior College
21	LEI LEI	NUS High School of Mathematics and Science
22	LIEW XIAO TIAN	Raffles Girls' School (Secondary)
23	KHOO SENG TECK	Raffles Junior College
24	CHEN NIANGJUN	Raffles Junior College
25	LIN MINGYAN SIMON	Victoria Junior College
26	NGUYEN HA THU	Victoria Junior College
27	CHEN XI	Raffles Junior College
28	WANG YIZHEN	Raffles Institution
29	YEO ZHENG HANG	Hwa Chong Institution
30	WANG HAOBIN	Raffles Junior College



Singapore Mathematical Olympiads 2007
Open Section Team Winner