SINGAPORE MATHEMATICAL PROJECT FESTIVAL 2017

PRELIMINARY ROUND

1. Junior Section

Session 1. NUS High School of Mathematics and Science, 18th February 2017.

ID	Time	Project Title	School
42	09:00–09:20	Chain reaction	NUS High School
25	09:20–09:40	Wefie taking	Nanyang Girls' High School
43	09:40–10:00	Exploring the magic of magic squares	NUS High School
20	10:00–10:20	Easing hospital wards allocation issues using graph colouring	Nanyang Girls' High School
Tea Break			
44	10:50–11:10	Gambler's ruin	NUS High School
41	11:10–11:30	Cardboard bridge building project (2)	School of Science and Technology
45	11:30–11:50	Trigonometrical inequalities	NUS High School
40	11:50–12:10	Cardboard bridge building project	School of Science and Technology

Supervisors:

42	Chai Ming Huang	40	Liu Yijie	43	Jiang Zewei
20	Ong-Yeo Pih Tai Helen	44	Chia Vui Leong	41	Liu Yijie
45	Lee Chan Lye	25	Sharon Lee		

Judges:

Name	Institution
Boo Jia Liang	Zhenghua Secondary School
Kok Lai Fong	Paya Lebar Methodist Girls' School (Secondary)
Zhao Dongsheng	National Institute of Education

Wednesday 15th February, 2017, 2:44pm

Session 2. National University of Singapore, LT24, 25th February 2017.

ID	Time	Project Title	School
36	09:00–09:20	Recreational — focused hospice report	School of Science and Techology
05	09:20–09:40	Tower of Hanoi and its variations	National Junior College
37	09:40–10:00	Reaction of the five human senses towards the environment around us mathematical psychology	School of Science and Technology
12	10:00–10:20	The Sentosa strategy issues using graph colouring	Methodist Girls' School
Tea Break			
38	10:50–11:10	Development of eco-friendly hospice to reduce environmental impact and increase operational efficiency	School of Science and Techology
18	11:10–11:30	Deluded prisoners	Paya Lebar Methodist Girls' School (Secondary)
39	11:30–11:50	Optimisation — the SST open house	School of Science and Technology

Supervisors:

36	Nur Johari	05	Lye Wai Leng	37	Yeo Chuen Chuen
12	Karen Chia	38	Nur Johari	18	Kok Lai Fong
39	Yeo Chuen Chuen				

Judges:

Name	Institution
Eric Tan	Cedar Girls' Secondary School
Yap Bee Leng	Xinmin Secondary School
Teo Kok Ming	National Institute of Education

Session 3. National University of Singapore, LT25, 25th February 2017.

ID	Time	Project Title	School
06	09:00–09:20	Approximating π through geometrical means	Hwa Chong Institution
17	09:20–09:40	Analysis of 2048 strategies	NUS High School
08	09:40–10:00	Project N.I.M.	Hwa Chong Institution
31	10:00–10:20	Queue less, eat more!	Zhenghua Secondary School
Tea Break			
10	10:50–11:10	Meffert's pyraminx	Hwa Chong Institution
32	11:10–11:30	The pigeonhole principle and Ramsey numbers	New Town Secondary School

Supervisors:

06	Ang Lai Chiang	17	Chai Ming Huang	08	Chen Zenghui
31	Boo Jia Liang	10	Chen Zenghui	32	Hang Hao Chuien

Judges:

Name	Institution
Liu Yijie	School of Science and Technology
Zulhilmi Bin Zulkiflee	Clementi Town Secondary School
Toh Pee Choon	National Institute of Education

2. Senior Section

Session 1. National University of Singapore, LT25, 18th February 2017.

ID	Time	Project Title	School
46	09:00–09:20	Sequences of sequences	NUS High School
15	09:20–09:40	The ultimate lock	Cedar Girls' Secondary School
47	09:40–10:00	NIM — the impartial game and its variations	NUS High School
03	10:00–10:20	Fractals	Temasek Secondary School
48	10:20–10:40	Determining congruence in polygons with more than 3 sides	NUS High School
Tea Break			
26	11:10–11:30	Exploration of tic tac toe variations	Xinmin Secondary School
49	11:30–11:50	An elementary approach to Euler's sums via trigonometric series	NUS High School
16	11:50–12:10	The unbreakable password	Cedar Girls' Secondary School
50	12:10–12:30	A refinement of Fejer-Jackson inequality	NUS High School

Supervisors:

46	Chan Yu Ming	15	Eric Tan	47	Jiang Zewei
03	Ng Kim Tu	48	Ye Xiajuan	26	Yap Bee Leng Kwek Yin Sy
49	Lee Tuo Yeong	16	Eric Tan	50	Lee Tuo Yeong

Judges:

Name	Institution
Lye Wai Leng	National Junior College
Hang Hao Chuien	New Town Secondary School
Tay Tiong Seng	National University of Singapore

Session 2. Dunman High School, 25th February 2017.

ID	Time	Project Title	School
02	09:00–09:20	Hacking hex	Hwa Chong Institution
22	09:20–09:40	Probability in gambling win and insurance bet	Dunman High School
04	09:40–10:00	Ride the tautochrone	Hwa Chong Institution
23	10:00–10:20	Chaos theory: a study of the double pendulum system	Dunman High School
07	10:20–10:40	The congruency of "iso-peri-area" triangles	Hwa Chong Institution
Tea Break			
35	11:10–11:30	Kakeya needle problem	Paya Lebar Methodist Girls' School (Secondary)
13	11:30–11:50	An enquiry into effective traffic systems	Hwa Chong Institution
24	11:50–12:10	A study on bicentric N-gons	Dunman High School
14	12:10–12:30	Encrypting encryption	Hwa Chong Institution

Supervisors:

02	Ang Lai Chiang	22	Khoo Geok Hwa	04	Ang Lai Chiang
23	Tan Chee Kian	07	Ang Lai Chiang	35	Kok Lai Fong
13	Zong Lixin	24	Tan Chee Kian	14	Zong Lixin

Judges:

Name	Institution
Chng Xun Qi	Catholic High School
Tan Chik Leng	Nanyang Girls' High School
Ku Cheng Yeaw	Nanyang Technological University

Session 3. Catholic High School, 25th February 2017.

ID	Time	Project Title	School
11	09:00–09:20	Sudoku & real-life applications	Nanyang Girls' High School
27	09:20–09:40	Finding calculator functions without a scientific calculator	Catholic High School
33	09:40–10:00	Graphs and its applications	New Town Secondary School
28	10:00–10:20	The painting problem	Catholic High School
19	10:20–10:40	A magic cube?	Nanyang Girls' High School
Tea Break			
29	11:10–11:30	Satellite orbits and GPS trilateration	Catholic High School
34	11:30–11:50	Venn-ture the unknown	Clementi Town Secondary School
30	11:50–12:10	The tournament problem	Catholic High School
21	12:10–12:30	Window patterns	Nanyang Girls' High School

Supervisors:

11	Tan Chik Leng	27	Tay Kew Yeow Glenn	33	Hang Hao Chuien
28	Tay Kew Yeow Glenn	19	Elizabeth Liow	29	Tay Kew Yeow Glenn
34	Zulhilmi Bin Zulkiflee	30	Tay Kew Yeow Glenn	21	Linda Chang

Judges:

Name	Institution
Chua Boo Woo	Hwa Chong Institution
Khoo Geok Hwa	Dunman High School
Wang Fei	National University of Singapore