



# 24th Bay Area Mathematical Olympiad

## Scores and awards

March 1, 2023

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*BAMO would not be possible without the support of the Simons Laufer Mathematical Sciences Institute, the generosity of Tom Davis and Ellyn Bush and Tom and Peggy Rike, and the support of numerous other individuals. To donate to BAMO, please contact [bamo@msri.org](mailto:bamo@msri.org).*

# 1 Overview

Nearly 600 students took part in the 24th BAMO on March 1, 2023, with 373 taking BAMO-8 and 221 taking BAMO-12. Over 100 schools were represented in nearly 40 different proctoring locations, including 81 participants from Seattle, Santa Cruz, Santa Barbara, Los Angeles, and San Diego.

Every BAMO since the first exam in 1999 (with the exception of 2020, due to the pandemic) has an awards ceremony take place a week or two after the exam, featuring a math talk by an exceptional speaker, followed by a brief presentation of awards. Prizes consist of T-shirts, electronic gift certificates for Powell's Bookstore, and Jamba Juice certificates for winning schools. This year's awards ceremony took place on Sunday, March 19, at Santa Clara University, and the speaker was Inna Zakharevich (Cornell University), who spoke about "Solving polynomials with origami."

For more information about BAMO, please visit <https://www.bamo.org>.

## 1.1 Score distributions

Each problem was worth 7 points, so the maximum total score for each exam was 35 points. The median scores were 15 and 12 points, respectively, for BAMO-8 and BAMO-12. The first two tables show the score distribution for each problem, and the third table shows the rank corresponding to a given score. For example, in BAMO-8, 72 people scored above 20 points.

BAMO-8	A	B	C1	D2	E3
blank	17	8	19	79	144
0	5	6	54	51	103
1	24	9	77	47	75
2	16	34	59	43	29
3	109	38	28	74	4
4	35	29	46	41	2
5	50	51	18	7	3
6	35	127	14	6	3
7	82	71	58	25	10
median	4	6	2	3	1

BAMO-12	C1	D2	E3	4	5
blank	4	15	85	88	104
0	5	3	29	39	23
1	17	14	30	44	49
2	30	27	10	12	27
3	35	32	3	6	5
4	21	24	5	2	4
5	13	7	9	4	1
6	13	4	9	3	5
7	83	95	41	23	3
median	5	5	2	1	1

Score	5	10	15	20	25	30
BAMO-8 rank	343	267	160	73	18	8
BAMO-12 rank	188	133	70	46	22	8

## 2 Individual awards

The BAMO-12 rankings are slightly different from what was reported at the awards ceremony on Mar. 19, 2023. Afterwards, we discovered several papers for problem #5 which had not been uploaded to the grading platform. This resulted in a tie for first place and a number of increased scores. In particular, we were impressed with the number of strong solutions to problem #5: three perfect papers, and five that missed full credit by just one point.

### 2.1 BAMO-8, Scoring 28 or more points

Name	School	Score
Atticus Stewart	Mirman School	34
Alex Zhan	Basis Independent Silicon Valley	34
Krittika Chandra	Jane Lathrop Stanford Middle School	33
Prince Rohatgi	Medea Creek Middle School	32
Kieran Callahan	Synapse School	31
Daphne Chen	Basis Independent Silicon Valley	31
Minghao Guo	Portola Highly Gifted Magnet School	31
Nupur Krishnan	Gale Ranch Middle School	30
Tejo Madhavarapu	Rivendell Academy of Fremont	29
Nathan Chen	Basis Independent Silicon Valley	28
Satyaki Sen	John F. Kennedy Middle School	28

**2.2 BAMO-8, Honorable Mention (24–27 points)**

Name	School
Anshuman Arun	Harvest Park Middle School
Manalee Chowdhury	The Harker School
Alexey Chub	Odle Middle School
Anshul Dandekar	Bayside Academy
Kaiyuan Ding	Ellen Fletcher Middle School
Itai Firstenberg	Helios School
Aiden Fong	Orinda Intermediate School
Allison Guan	The Nueva School
Seojin Kim	Harvest Park Middle School
Alena Kutsuk	Graham Middle School
Connor Leong	Crocker Middle School
Patrick Liang	Portola Highly Gifted Magnet School
Kevin Lu	Bayside Academy
Elliot Maa	Frank S. Green Jr. Middle School
Henry Meier	Jane Addams Middle School
Bridget Procter	Proof School
Jayson Quah	Harvest Park Middle School
Vsevolod Titov	Rose Hill Middle School
Alan Verbitski	Willows Preparatory School
Kyle Wan	Proof School
Alice Wang	Bayside Academy
Derek Wu	Dorris-Eaton School
Graham Zhang	Proof School
Pablo Zhang	The Nueva School
Randy Zhong	Ellen Fletcher Middle School

**2.3 BAMO-12, Scoring 28 or more points**

Name	School	Score
Linus Tang	Davidson Academy Online	35
Justin Lee	Peach Blossom	35
Elliott Liu	Torrey Pines High School	32
Robin Sharif	Mission Vista High School	32
Sebastian Weinberger	College Prep	31
David Zhang	Dougherty Valley High School	31
Sheldon Tan	Monte Vista High School	31
Catherine Li	The Harker School	29
Taiga Nishida	The Nueva School	29
Jacopo Rizzo	Torrey Pines High School	29
Rohan Garg	Amador Valley High School	28
Ritwin Narra	Silver Creek High School	28
Yourui Shao	Basis Independent Silicon Valley	28
Owen Xu	Branson	28
William Zhao	Dougherty Valley High School	28

**2.4 BAMO-12, Honorable Mention (22–27 points)**

Name	School
Fateh Aliyev	Venice High School
Anju Aoi	Proof School
Kailua Cheng	Amador Valley High School
Hugh Cheng	Harvard-Westlake School
Rohan Das	Basis Independent Silicon Valley
Jonathan Du	Los Altos High School
Hannah Fox	Proof School
Ryan Fu	Amador Valley High School
Pico Gilman	Proof School
Jackson Gish	Proof School
Neil Kolekar	Los Altos High School
Alan Lee	Gunn High School
Michelle Liang	Canyon Crest Academy
Angela Liu	Homeschooled
Felix Liu	Basis Independent Silicon Valley
Rohan Ramkumar	The Harker School
Arnav Ratna	College Prep
Marius Rutkowski	La Canada High School
Julia Xiang	Dougherty Valley High School
Nathan Ye	Gunn High School
Alex Zitzewitz	Proof School

### 3 School Awards

BAMO recognizes two types of school awards: *participation* awards, going to the schools with the largest number of students scoring at least 7 points (one problem) on the exam, and *team* awards, measured by the sum of scores of the top three students from each school.

#### 3.1 BAMO-8 Participation Awards

School	# Students
Ellen Fletcher Middle School	37
The Nueva School	24
Proof School	18

#### 3.2 BAMO-12 Participation Awards

School	# Students
Proof School	24
Henry M. Gunn High School	15
Amador Valley High School	9
La Canada High School	9
Palo Alto High School	9

#### 3.3 BAMO-8 Team Awards

School	Sum of three highest scores
Basis Independent Silicon Valley	93
Harvest Park Middle School	75
Proof School	74
Ellen Fletcher Middle School	74

#### 3.4 BAMO-12 Team Awards

School	Sum of three highest scores
Amador Valley High School	81
Dougherty Valley High School	79
Proof School	77

## 4 Special Awards

BAMO special awards single out students for unusually creative solutions, unusually good art, excellent writing, and also, exceptional youth. This year we gave several Young Student Awards, for the top BAMO-8 students among the 30 participants in grades 5 or younger.

Name	School	Grade	Score
Alexander Braun	Noesis School	5	21
Riaan Govind	Synapse School	5	20
Aiden Bi	Pinewood School	4	20
Wilson Wei	Sutter Elementary	4	18
Alvin Zhu	Homeschooled	3	15
Lucas Zhang	Walnut Grove Elementary	6	12

And last but not least, we awarded the Best Art Award to Daniel Luo, a 7th grader at Ellen Fletcher Middle School, for an outstanding map of the world drawn in lieu of a solution to problem E3.