





IN THE CITY OF NEW YORK



2026年美国 Math League 决赛和数学夏令营介绍(3-10年级)





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02. 决赛和数学夏令营



03. 赛前学习和培训



04. 学生夏令营的收获



05. 适合参加的学生



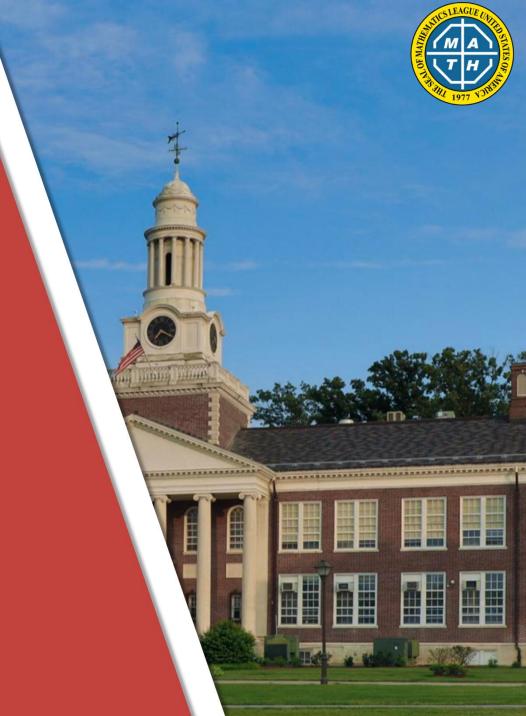
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美国 Math League 历史





美国 Math League 历史

历史悠久: 自1977年起,每年持续举办

卓越影响力:美国及北美地区具有卓越影响力的中小学数

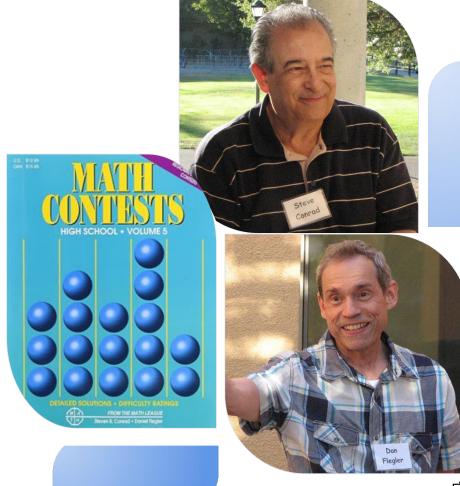
学思维探索活动

创始人: Mr. Steven R. Conrad 和 Mr. Daniel Flegler

美国著名数学教育家

创始人荣誉奖项:

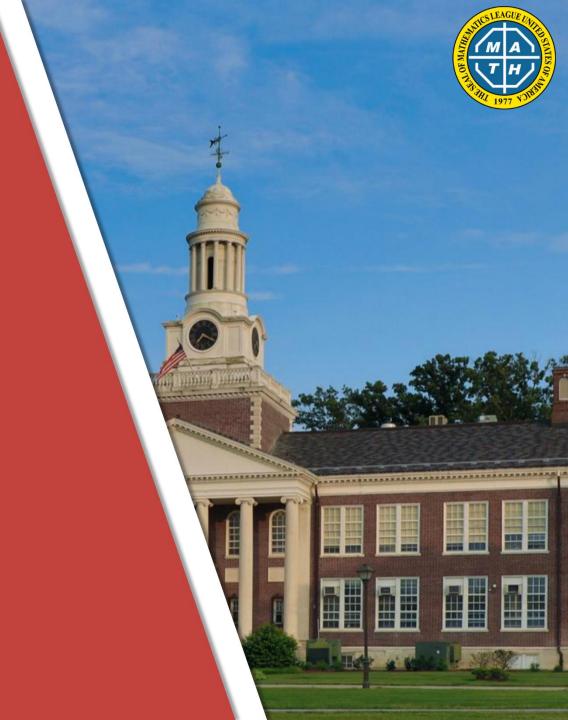
- 1977年Mr. Daniel Flegler获得普林斯顿大学颁发的"卓越中学 教育奖"
- 1985年荣获由里根总统颁发的"杰出数学和科学教育总统 奖" (PAEMST), 全美国数学和科学教育最高奖
- 担任了很多数学杂志的主编和审阅人
- 美国十五个州和地区的数学竞赛组委会主任委员或委员
- 六年美国SAT 组委会会员
- 共同出版了24本书







决赛和数学夏令营





决赛和数学夏令营概述

2026年美国 Math League 决赛和数学夏令营 由美国 Math League 思维探索活动和普林斯顿大学数学系 (Princeton University Mathematics Department)、哥伦比亚大学数学系 (Columbia University Mathematics Department)、威廉姆斯学院 (Williams College) 联合举办。

日期安排:

3-5 年级组: 2026年7月11日(check-in date)到7月18日(check-out date)

6-10 年级组: 2026年7月19日(check-in date)到7月27日(check-out date)

参与学生:

来自美国、加拿大、中国等世界各地成绩优异的学生

活动内容:

包括决赛、数学讲座、夏令营活动等





纽约时报(The New York Times)报道



关于美国 Math League 决赛 和数学夏令营的报道



The New york Times

NUMBERPLAY

Breaking the Grip of the Gaokao, China's SAT

By GARY ANTONICK August 31, 2015 12:00 pm



Gary Antonick (center front) with the China Math League team outside Wallenberg Hall at Stanford University on Aug. 19, 2015. Gary Antonick

The notorious *Gaokao*, (高考, or "High Test") is China's SAT on steroids, with a score on the nine-hour test being the sole criterion for admission to Chinese universities. Preparing for the test is a years-long obsession for both students and parents. (In case you missed it: Brook Larmer's *Inside a Chinese Test-Prep Factory*.) And for many, the unfortunate consequence is that the lengthy preparation destroys, rather than enhances, academic ability. Student enthusiasm and curiosity are crushed.

Although many in China are aware of the Gaokao's impact, the test has a 1,300-year history and will not be easily killed. Instead, perhaps the best way to break the Gaokao's life-draining grasp is indirectly, through clubs and activities that rejuvenate kids' sense of curiosity and fun. And two weeks ago I discovered one such extra-curricular activity that's becoming popular among Chinese math-lovers: The Math League, an organization based in New Jersey committed to having kids worldwide enjoy math and discussions about problem-solving.





营地管理





每12名学生一组



每组2名负责老师



全程监管 统一安排





日程安排

3-5年级组

参考: 2025年美国 Math League 决赛和数学夏令营4-5年级组课程表:

Math League 2025 Schedule (Grades 4-5)

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
978628802 S	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul
8:00 AM 8:30 AM		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
9:00 AM		Math Lecture & Math Activities	10.0020 0.00 0.001000 0.001000				111111	
9:30 AM		(Professor: Miller, Title: Egg Drop	Math Lecture & Math Activities (Professor: Marcus, Title: The mountain climber	Math Tournament (Speed Round, location: Decker)	Math Lecture & Math Activities (Professor: Hagen, Title: Scavenger Hunt)	Math Lecture & Math Activities (Professor: Rauh, Title: Modular Origami I)	Math Lecture & Math Activities(Professor: Dr. Rui, Title: Eight Little Squirrels)	
10:00 AM		Mathematics: it IS all it's cracked up to be!)	problem)					Depature Day
10:30 AM		Math Lecture & Math Activities	Math Tournament (Individual Round, Part I, location: Decker)	Math Lecture & Math Activities (Professor: Devlin, Title: Ten truths and a	Math Lecture & Math Activities(Professor: Einstein, Title: How big is infinity?)	Math Lecture & Math Activities(Professor: Rauh, Title: Modular Origami II)	Math Lecture & Math	(International students, 8:30 - 10:00
11:00 AM		(Professor: Miller, Title: Pirates and Math: Dividing the Spoils and						AM Taushausa
11:30 AM		Game Theory)	i, iodatoli. Decker)	lie)	Ellisteni, Title. How big is mininty.)	Departure (for North American Students, 9:00 - 11:00 AM, Townhouse West Lounge)	Past to Present)	
12:00 PM								• 3
12:30 PM		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	,
1:00 PM 1:30 PM		Note: Starting at 1:00 PM!						
2:00 PM	Arrival at Campus (All students, check in time:	Math Lecture & Math Activities	Math Lecture & Math Activities (Professor: Luo, Title: The Beauty of Quantum	Math Lecture & Math Activities (Professor: Whitehead, Title: Apollonian Circle Packings)	Math Lecture & Math Activities(Professor: Gomez, Title: Stepping into Other Dimensions of Space)		Math Lecture & Math Activities(Professor: Mourya, Title: Welcome to Computer Science!)	
2:30 PM	2:30 - 6:30 PM, Town House West Lounge)	(Professor: Ellis, Title: Four Numbers Game)	Computing from a Mathematical Perspective)					
3:00 PM		Break	Break	Break	Break	Field Trip (Princeton University and Vicinity)	Break	
3:30 PM	Opening dinner at							
4:00 PM	Student Center (Room 225, starting at 5:45	Math Tournament (Team Round, location: Bliss)	Math Tournament (Individual Round, Part II, location: Decker)	Math Tournament (Relay Round, location: Decker)	Math Lecture & Math Activities(Professor: Ellis, Topic: The Futurama Theorem)		Tournament Summary ()	
4:30 PM	PM), followed by ice breaker at Decker around		20		0.00			4
5:00 PM 5:30 PM	7:30 PM. Return to	Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
6:00 PM	Townhouse West by 9:30 PM for fire drill.	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	
6:30 PM	rw for me drin.	Dime	Dillici	Dimer	Diffici	Dinici	Dillici	
7:00 PM								
7:30 PM 8:00 PM					Math League Award Ceremony (starting at	Reading, Journal Writing,	Reading, Journal Writing,	
8:30 PM	Talent Show, Part 1 (location: Decker)		Talent Show, Part 2 (location: Decker)	movie night (Decker)	7 PM, location: Cromwell Lounge)	Quiet time	Quiet time	
9:00 PM								
9:30 PM	Y Called and	I interpret	Tinha	Lights out	Tinha	Tinha	Tinte out	
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

官方人工客服



日程安排

6-10年级组

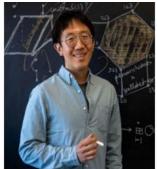
参考: 2025年美国 Math League 决赛和数学夏令营6-9年级组课程表:

Math League 2025 Schedule (Grades 6-9)

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
8:00 AM		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:30 AM 9:00 AM		Math Lecture & Math						Math Lecture & Math Activities	
9:30 AM		Activities(Professor: Barranca, Title:	Math Lecture & Math Activities (Professor: Devlin, Title: Ten	Math Lecture & Math Activities (Professor:	Math Tournament (Speed Round, location:	Math Lecture & Math Activities (Professor:		(Professor: Miller, Title: Pirates and	
10:00 AM	Applied Mathematics: Puzzles from Past to Present) Math Lecture & Math Activities(Professor: Mourya, Title:	(Professor: Devlin, Title: Ten truths and a lie)	Ellis, Title: Modular Origami)	Social Science)	Hagen, Title: Scavenger Hunt)	Field Trip (Princeton University and Vicinity)	Math: Dividing the Spoils and Game Theory)	D . D	
10:30 AM			Math Lecture & Math Activities (Professor: Einstein, Title: How big is infinity?)	Math Tournament (Individual Round, Part I, location: Social Science)	Math Lecture & Math Activities (Professor: Nacin, Title: Secrets of Latin Square Cage Puzzles)	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Departure (for North American students, 8 - 11 AM, Townhouse East Lounge)	Math Lecture & Math Activities(Professor: Nacin, Title:)	Depature Day (International students, 8 - 11 AM, Townhouse East Lounge)
11:00 AM									
11:30 AM									
12:00 PM		£.3.2				0.40000	(4.00.41)	14004	
12:30 PM	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	
1:00 PM	8	Math Lecture & Math Activities						7	
1:30 PM		(Professor: Shapiro, Title:						100000000000000000000000000000000000000	
2:00 PM		Introduction to Mathematical		Math Lecture & Math Activities(Professor:		Math Lecture & Math Activities (Professor:		Math Lecture & Math Activities(Professor: Luo, Title: The	
2:30 PM	Arrival at Campus (International	Physics) Arrival at Campus (North America students, 2 - 5PM, Townhouse East Lounge)	Math Tournament (Team Round, location: Social Science)	Math Lecture & Math Activities(Professor: Myer, Title:)	Math Lecture & Math Activities(Frotessor: Rauh, Title: "Water Bomb Base")	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Math Lecture & Math Activities(Professor: Marcus, Title: The mountain climber problem)	Activities(Professor: Luo, 11tie: The Beauty of Quantum Computing from a Mathematical Perspective)	
3:00 PM	students, check in	Break	Break	Break	Break	Break		Break	1
3:30 PM 4:00 PM 4:30 PM	D PM Lounge) I Cebreaker at night in Decker D PM D PM D PM	Math Lecture & Math Activities (Professor: Shapiro, Title: Topology in Physics)	Math Lecture & Math Activities (Professor: Ellis, Title: A variety of hat problems)	Math Tournament (Individual Round, Part II, location: Social Science)	Math Tournament (Relay Round, location: Decker + Cromwell)	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Math Lecture & Math Activities (Professor: Miller, Title: Egg Drop Mathematics: it IS all it's cracked up to be!)	Tournament Summary ()	
5:00 PM 5:30 PM		Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
6:00 PM 6:30 PM			Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	
7:00 PM 7:30 PM 8:00 PM 8:30 PM 9:00 PM 9:30 PM		Dinner (Student Center room 100, starting at 6 PM) and Orientation in Decker	Talent Show, Part 1 (location: Decker)	Talent Show, Part 2 (location: Decker)	Movie night (Decker)	Math League Award Ceremony (location: Decker)	Reading, Journal Writing, Quiet time	Reading, Journal Writing, Quiet time	
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

备注: 6-10年级组, 组委会安排了同行老师。





June Huh Princeton University



Matt Weinberg Princeton University



Jacob Shapiro Princeton University



Mark Saul Mathematical Association of America



Doron Zeilberger Rutgers University



Neil Sloane AT&T Bell Labs



授课教授 (部分)



Steven Miller Williams College



Glen Whitney National Museum of Math



Pat Devlin Swarthmore College



Michael Thaddeus Columbia University



Arthur Benjamin Harvey Mudd College



Pravesh Kothari Princeton University





往届授课内容

- 1. From the Quadratic Formula to Differentiation (从二次公式到微分)
- 2. Mathematics in History, Applications, and Enjoyment (数学的历史、应用和乐趣)
- 3. Mathematics and Music (数学与音乐)
- 4. The Wonderful World of Permutations (奇妙的排列世界)
- 5. Using Randomness in Proofs (在证明中使用随机性)
- 6. Mathematics and Games (数学与游戏)
- 7. Stable Machine (稳定的机器)
- 8. Famous Sequence (著名序列)
- 9. Tensegrity Polyhedra (张力多面体)
- 10. Grundy's Game (格兰迪游戏)
- 11. Apollonian Circle Packings (阿波罗尼安圆填充)
- 12. Diving into Dimensions (维度探索)
- 13. How to Use Math to Build a Safe World? (如何用数学构建一个安全的世界?)
- 14. What's Your Favorite Number? (你最喜欢的数字是什么?)
- 15. The Art of Problem Solving (解题的艺术)
- 16. Unlocking Math Magic: Exploring Numbers with AR & VR (揭开数学魔法:用AR和VR探索数字)
- 17. Knot Theory (结理论)
- 18. Checking Divisibility Using Finite Automata (使用有限自动机检查可除性)
- 19. NIM and JIM
- 20. Introduction to Mathematical Physics (数学物理导论)
- 21. Modular Origami (模块折纸)











个人决赛:

Individual Round:

参赛学生独立完成10-15道题目,每道题限时7~10分钟不等(题目相对比较难)。

Speed Round:

在45分钟内完成60道填空题,考察答题速度和准确度。

团体决赛:

Team Round:

团队成员在1-2小时内共同完成10-15道题。

Relay Round:

以接力赛的形式,一共4道接力题,每道接力题包含4个独立的问题。每4个团队成员排成一列,依次解题并传递答案,最终以第四人提交的答案判定得分。

三万人工客服







放松时刻



才艺表演



参观普林 斯顿大学



官方人工客服





学生小结

✓ 以下是学生写的关于决赛和数学夏令营的随笔

The American Math League: My Wonderful Week at Camp Nothing interests me more than "math" and "English" at school, So I always attend math competitions whenever I get the chance, such as AMC8, UKMT, and most importantly, the I couldn't believe my eass when I saw the very formal enail sent by the American Math League. I was so happy about that I can go to participate in the summer camp held by the Math League in America! In came It was probably the best week of my life. The competition is held in TCNJ (The College of New Jersey and the environment is superb. There are grass everywhere and tall, tovering trees which housed [neat] hundreds o lively, cute squirells. Sometimes, we can see deers eating in the forest trees. I have two nice toomat roommates, Maggie and kitty, We had a lot of fun with each other, I will here

The activities in the camp consists mainly of lect

and math competitions. The lectures are fun and interesting. I learned several new things during the courses. I particularly like the Fibonacci classes on Thursday and the Logic puzzles on Monday, as well as the Skyscrapers games. There are four parts of the competition: individual goest round, relay, and team round. All the tasks are difficult and I enjoyed relay and speed round the most. Although our team is the the team ever, didn't win a prize, we had a very good time together. Apart from competitions and lectures, there are also talent shows, a magic show, and the in Awards Cevernony. I was amazed that & my fellow campers are so talented. I thought that they were only good at math! The magic show was amazima, the world-famous Magician quessed the days of the week 500 years ago! and The magic show is probably to my favorite part of the activities. I love my courselors, Medha and Diyah. They are so ? nice and care about us, and raiso check a whether

I am now sitting in Eichoff Hall, the college of Now Jersey, writing this essay about the best-past seven days. It has been a wonderful week in this wonderful camp, I learned so much, both about Maths and life. I couldn't imagine leaving this campus and saying good bye to my friends tomorrow. I'd love to express my sincere gratitude to friends, contetors and proffessors who helped me greatly where days. To be honest, I sometimes had trouble getting good marks in Maths back at school, but since I was really interested in science. and had a will to improve my Maths ability, I propared for this camp and compession with both or governs and hopes.

I man so talk about friends them and hopes.

I met my teammeter and transpare on the very first day, and they secone my year great friends We want for to lunch experter, that regetter, astered competitions and play sports together. We We ever explore the campus eogether. What torches me most is when my friends gave up going to the campus town on the third day to help me prepare for my talent when and decided to goo the other day. They encouraged me when talent show and decided to be a fort on myself, they hoped me when I was afraid that I may make a fort on myself, they hoped me take videos of my clame and gave suggestions on my speech. After a week strong feeling what these own friendship matters a fort to wour lives. There we I want to thank Math League again here, it gives a constitute of the strong to the strong the strong to the strong the strong the strong to the strong the strong the strong to the strong the strong to the strong the strong the strong to the strong a chance to meet and know each other, and learn from each other Our counselors, Admand Kovi, had been great too. They were so responsible that they seem a little than and so friendly and so helpful. They make sure we attend events together and online. They listen to our needs and tryy their best to help. They we played volley ball tagether and had interesting conversations on color differences Talking about volleyball, I'd like to mention burren They ove also our friends.

官方人工客服





行程简介和活动照片

✓ 在夏令营期间,组委会会发布每日的活动简介和照片

2024年美国 Math League 决赛和数学夏令营6-9年级组 行程简介和照片



Day 1 The Excitement Begins

Day 2 Lectures

Day 3 Filed Trip (Franklin Institute), Arrival at Campus (North American students), Openning Night Dinner & Ice-Breaker, and Fire Drill

Day 4 Team Round and Lectures

Day 5 Individual Round, Lectures, and Talent Show (Part I)

Day 6 Speed Round, Lectures, Relay Round, and Talent Show (Part II)

Day 7 Lectures and Awards

Day 8 Lectures, Scavenger Hunt, and Field Trip (Princeton University and Vicinit

Day 9 Lectures

Day 10 Depature Day





点击这里查看 Day 2 照片(部分)



Today we learned about the importance of mathematics historically and in today's world. Steven Miller of Williams College began the day by discussing how to solve linear equations and quadratic equations, before showing us the very complicated formula for solving third degree equations. He then discussed how to approximate the value of the square root of 3 more accurately than a calculator can. Students on each team were challenged to find their best approximation of the square root of 3 using a simple algorithm that he provided. We eventually found an approximation of the square root of 3 that was or o using a simple algorithm that he provided. We eventually locally allowed an accurate approximation. Professor 官方人工客服 accurate to about 20 places. When asked what was the practical value of having such an accurate approximation. Miller explained that when we use Google Maps, the directions would be inaccurate without such approximations.







安全与保障

全程监管,统一安排

学生在营地期间所有学习和活动均由学校老师全程监管和统一安排,学生不能自由行动,每 12名学生有2名学校老师24小时监管。





大学宿舍,标准用餐

标准大学学生宿舍,每个单元有三层楼,每层楼有4个单间,每层楼共用一个浴室和卫生间。 用餐是标准美国学生用餐(自助餐)。

医疗保障服务

感冒、发烧、肚子痛等小病,学校医院可以立即治疗;其他情况,学校老师会送学生前往附近的医院就诊。



接机与送机服务

如有需要,组委会提供接送机服务。组委会老师 去机场接学生或者送学生去机场,帮助学生值机、 托运行李等。



赛前学习和培训





赛前学习与培训

赛前学习与培训的内容

- 美国"天才班"课程及练习,培养学生的创造性思维、批判性思维及解决问题能力
- 往届决赛试题解析,学习数学的英文思维,掌握数学英文词汇,深刻理解数学问
- 决赛和夏令营期间教授授课内容预习,帮助学生更好地理解和吸收夏令营课程
- 美国其他顶尖数学竞赛试题解析,开拓视野
- 数学与创新
- 中美教育对比,帮助学生更好地适应美国教学方式

学习安排

赛前8周,每周发给学生**学习资料和评测** 题(电子版),由美国 Math League 思维探索活动和哥伦比亚大学、普林斯顿大学、威廉姆斯学院的教授共同制作。

培训方式

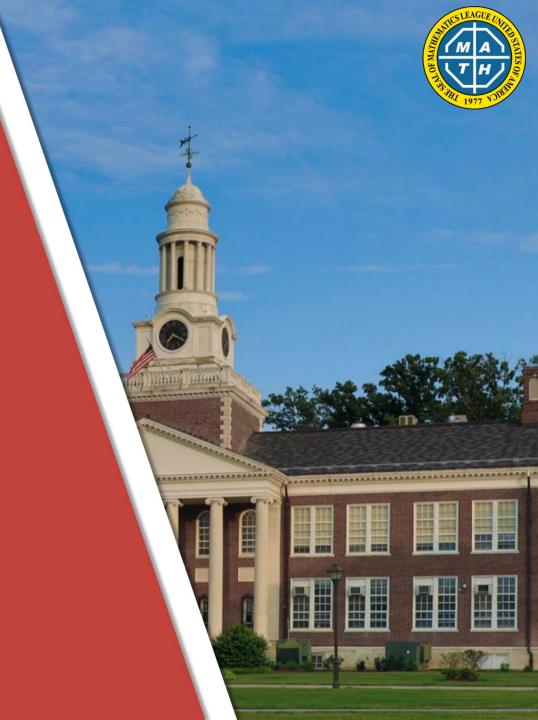
直播授课: 5次直播授课, 共计10小时, 由资深教授讲解2025、2024、2023年、2019年 Math League 决赛部分真题, 解答学生问题。



官方人工客服



学生在决赛和数学夏令营的收获





国际交流

- 参与世界级数学竞赛决赛,获得证书
- 在顶尖教授指导下学习数学,拓展视野
- 与全球优秀学生交流、学习,建立友谊

学术提升

- 有机会获得教授推荐信,和教授建立长期的联系,合作发表数学论文
- 许多学生被世界顶尖大学录取(哈佛、斯坦福、普林斯顿等)





决赛和数学夏令营证书

个人赛决赛证书









结业证书

团体赛决赛证书









志愿者证书





以下是参加美国 Math League 决赛和夏令营的两名学生(一名小学生和一名初中生)在 Steven Miller 教授 (Williams College)的指导下撰写的 数学论文 (已在著名数学学术期刊上发表)。





GEOMETRIC PROOFS OF THE IRRATIONALITY OF SQUARE-ROOTS FOR SELECT INTEGERS

ZONGYUN CHEN, STEVEN J. MILLER, CHENGHAN WU

1. Introduction

The positive integers $1, 2, 3, \ldots$ are not surprisingly one of the most important sequences in mathematics, and typically the first encountered. Quickly one meets interesting sub-sequences, such as the primes $(2, 3, 5, 7, 11, \ldots)$, the perfect squares $(1, 4, 9, 16, 25, \ldots)$ and the Fibonacci numbers $(1, 2, 3, 5, 8, \ldots)$ to name just a few. These are well studied and arise in numerous places; see the On-line Encyclopedia of Integer Sequences [OEIS] for details and properties of these and others.

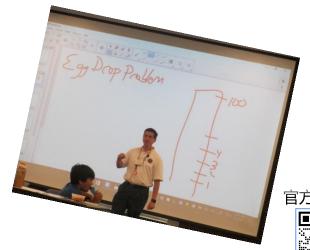
Almost all integers have irrational square-roots, with the percent of $n \le x$ with $\sqrt{n} \notin \mathbb{Q}$ approximately $100 \cdot x^{-1/2}\%$. The standard proof uses the property that if a prime p divides a product xy then p|x or p|y or both (see for example [MS] for a proof) and the Fundamental Theorem of Arithmetic (every integer can be written uniquely as a product of primes in increasing order; see [HW]).

Assume a non-square n>1 has a rational square-root; thus we can write $\sqrt{n}=a/b\in\mathbb{Q}$ with a,b relatively prime integers and without loss of generality it suffices to consider n that are square-free, as if $n=m_1m_2^2$ then $\sqrt{n}=\sqrt{m_1}\cdot m_2$. Then $nb^2=a^2$. As n>1 is square-free, there is a prime p that divides n. Thus $p|a^2$ so p|a and we can write a as αp . Substituting yields $nb^2=\alpha^2p^2$; as n is square-free and a multiple of p, we must have n/p is an integer relatively prime to p and thus $p|b^2$. A similar argument now shows $b=\beta p$, contradicting a and b are relatively prime and therefore \sqrt{n} is irrational.

There's a lot of interesting history on this proof; if we don't use the property that if a prime divides a product then it divides at least one factor, we can mimic the above argument, but only by essentially reproving the result case by case. For example, if n = 2 then we would have $2b^2 = a^2$. If $a = 2\alpha + 1$ is odd then $a^2 = 4\alpha^2 + 4\alpha + 1$ is odd, and thus cannot be a multiple of 2, and thus $a = 2\alpha$. Similarly if n = 3 we would have $3b^2 = a^2$ and 3 must divide the right hand side as it divides the left. We can write $a = 3\alpha + r$ with $r \in \{0, 1, 2\}$ and note

$$a^2 = 9\alpha^2 + 6\alpha r + r^2 = 3(3\alpha^2 + 2\alpha r) + r^2$$
,









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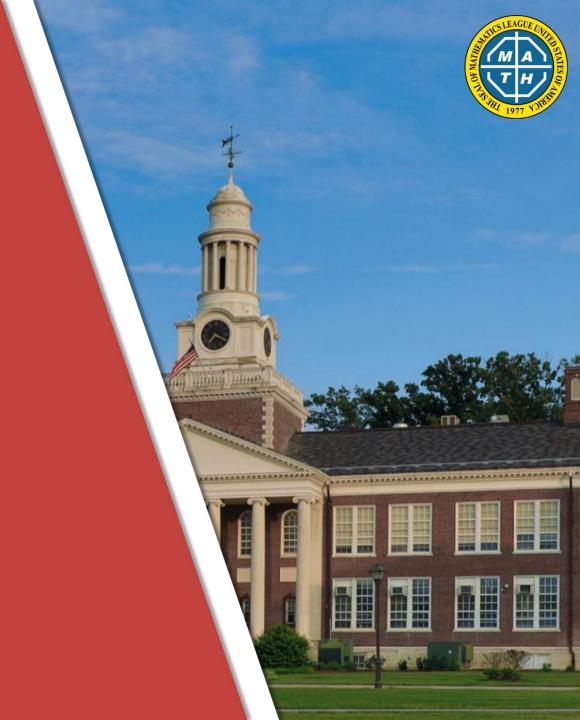
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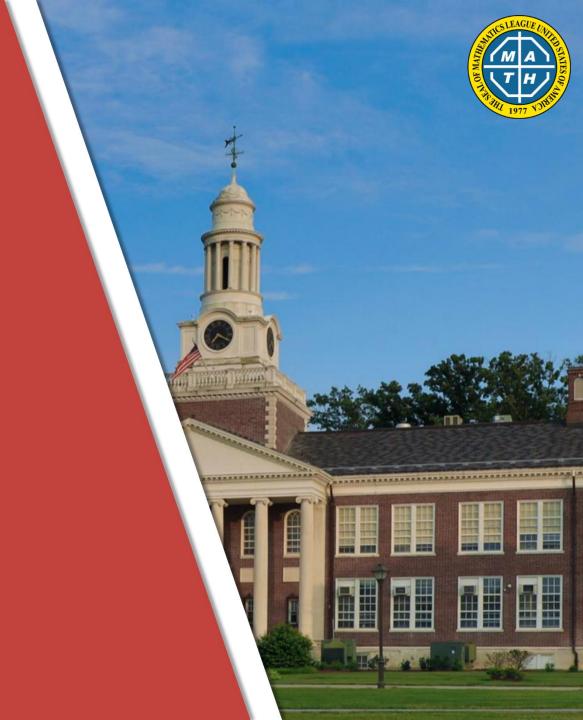




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