

# BMT Official Contest PDF



## 1 Introduction

The Berkeley Math Tournament (BMT) will be held on Sunday, April 7, 2019, on the campus of the University of California, Berkeley. It will take place mainly in four campus buildings: Dwinelle Hall, Wheeler Hall, Barrows Hall, and the Valley Life Sciences Building.

## 2 Exam Rules

- Graph paper and calculators are prohibited, but protractors and compasses are permitted.
- Blank white scratch paper will be provided for all participants.
- All answers must be exact, reduced, and simplified.
- Illegible answers will not be graded.
- Cheating in any form will not be tolerated, and failure to comply with all rules may result in immediate and irreversible disqualification.

## 3 Exam Breakdown

### 3.1 Power Round

- A 60-minute team test containing several multi-part questions, focusing on a single topic.
- Logical rigor is emphasized.
- Full write-ups and proof of all claims are required unless otherwise stated.
- Each team will receive an envelope to submit all their work in Power Round.

### 3.2 Team Round

- A 40-minute team test consisting of 15 questions with numerical answers. Only one answer sheet will be collected per team.

### 3.3 Focus Rounds

A 60-minute individual exam consisting of 10 short-answer questions which allows students to display their skills in particular topics. Students' prior knowledge of the topic and skills gained in high school math courses will be tested.

The following Focus Rounds will be offered at BMT 2019:

- Algebra: Equations and summations, functions and inverses, theory of roots and polynomials.
- Discrete: Discrete probability, counting and combinations, modular arithmetic, divisibility and primes, base arithmetic, linear Diophantine equations.
- Geometry: Areas and volumes, two and three dimensional Euclidean geometry, geometric probability.

### Individual Round

A 90-minute individual exam consisting of 20 question which test understanding of the three focus topics above: algebra, discrete mathematics, and geometry

## 4 Scoring and Awards

### 4.1 Scoring

Final team scores are calculated by a linear combination of the four rounds, weighted as below:

- Focus: 25%
- Individual: 25%
- Team: 20%
- Power: 30%

Teams with the top 8 overall scores will receive recognition and prizes

### 4.2 Awards

The top 5 scorers on the Individual Round and the top 3 participants from each Focus Round will also receive awards. The top finishers at BMT will qualify for the US Math Competition Association (USMCA) national championship. In the event of a tie, ARML-style tiebreakers will be used.

## 5 Tournament Day Breakdown

1. Teams will check in at the tables in Wheeler Hall from 8:00 - 9:00 am. Teams will go to their homerooms in preparation for the Power Round.
2. Breakfast will be provided in front of Wheeler Hall. The Power Round will run from 9:15 - 10:15 am.
3. Teams will remain in their homerooms for the Team Round, which runs from 10:30 - 11:10 am.
4. Lunch will run from 11:30 - 1:00 pm.
5. Students will proceed to their classrooms for their Focus Rounds, which run from 1:10 - 2:10 pm.
6. Students will stay in the same room for the Individual Round, which runs from 2:20 - 3:50 pm.
7. Activities will be held from 4:00 - 5:30 pm.
8. Tiebreakers for Focus Rounds will be held from 4:00 - 4:15 pm.
9. Tiebreakers for Individual Round will be held from 5:15 - 5:30 pm.
10. The Closing Ceremony will be held at Savio Steps from 5:30 - 6:30 pm (weather permitted).

## 6 Activities

- **Cliff Stoll** - Public Speaker (Location: Wheeler 104 — 4:30 - 5 pm)

Join the narrative by Cliff Stoll, a frequent guest on Numberphile and founder of Acme Klein Bottles!

- **Liar Game** (Location: Dwinelle 145 — 4:00 - 5:30 pm)

Test your skills in manipulation, game theory, and social psychology through a laid back game hosted by Justin Yokota, BMT's Co-Head Problem Writer. Winner will receive a free Klein Bottle from our guest speaker, Cliff Stoll.

## 7 Schedule

Time	Event	Location
8:00 - 9:00	Check In and Breakfast	Wheeler Hall
9:15 - 10:15	Power Round	Homerooms (See Team Packet)
10:30 - 11:10	Team Round	Homerooms
11:30 - 1:00	Lunch	On Campus
1:10 - 2:10	Focus Rounds	See Team Packet
2:20 - 3:50	Individual Round	Same as Focus Rounds
4:00 - 4:15	Tiebreakers for Focus Rounds	Barrows 126
4:00 - 5:30	Activities	Cliff Stoll Talk - Wheeler 104 Liar Games - Dwinelle 145
5:15 - 5:30	Tiebreakers for Individual Round	Barrows 126
5:30 - 6:30	Closing Ceremony	Savio Steps (Weather Permitted)