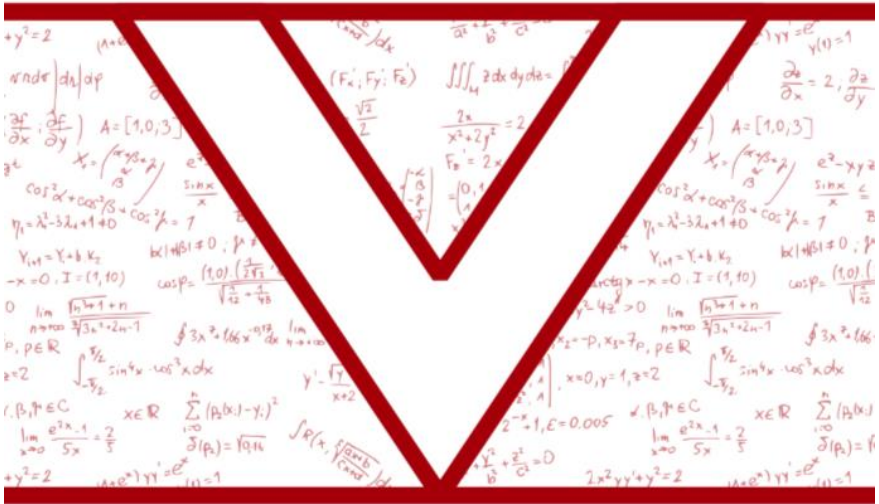


MBMT



5th Annual Montgomery Blair Math Tournament

March 30, 2019
Montgomery Blair High School

51 University Blvd. East
Silver Spring, MD 20901

Dear MBMT community,

Welcome to the fifth annual Montgomery Blair Math Tournament! We're so excited to welcome over 350 students and over 75 teams to this year's tournament. Today, we reach the culmination of months of problem writing, logistical planning, outreach emails, and much more, and we sincerely hope that you will find today's tournament engaging, challenging, and fun.

At MBMT, we hope that you will discover that math extends so much farther than the classroom, the worksheets, and the tests. To that end, we've carefully curated problems that will twist your brain in new ways and reveal fresh connections in concepts and theorems that you've learned in math class and math team. Whether you're a rookie mathlete or a veteran competitor, we are confident that today, you will experience the satisfaction that comes from mathematical problem solving, while also feeling the tension that comes with tackling an unsolved problem.

Outside of the math, take this opportunity to meet new friends and interact in this wonderful community of mathematicians. Math is not an individual endeavor, but a community effort - Isaac Newton, one of the pioneering mathematicians of the 17th century, once said, "if I have seen further it is by standing on the shoulders of giants." By learning math together, you will be able to stand on the shoulders of giants as well!

We would also like to take this time to thank all of our coaches, parents, and chaperones, who are the giants that prop us up to allow us to achieve more than we ever thought we could. MBMT would not be possible without all of your support.

Once again, welcome to the fifth annual MBMT! Ready your pencils, we have an exciting afternoon planned!

Regards,

MBHS Math Team

Student Schedule

- 11:45 - 12:15 PM Registration
- 12:30 - 1:00 PM Subject Test 1
- 1:05 - 1:35 PM Subject Test 2
- 1:35 - 1:55 PM Break
- 2:00 - 2:45 PM Team Round
- 3:00 - 4:00 PM Guts Round
- 4:00 - 4:30 PM Tiebreakers and Dinner
- 4:30 - 5:15 PM Fun Round
- 5:20 - 6:00 PM Awards Ceremony

Coaches and Parents

Coaches: Please feel free to make use of our coaches waiting room located in room 162 during each round. Coaches may meet with their students between each round.

Parents: After your child has been registered, we kindly ask you to leave the building until the awards ceremony. A list of nearby cafés and shops is provided on the page “Information for Parents.” Parents are definitely encouraged to join us for the awards ceremony, which will be held in the Student Activity Center (cafeteria) beginning at 5:20 PM.

Rules for Competitors

Permissible materials: Students should bring pencils/pens and erasers. Scratch paper will be provided. The following are NOT allowed: compasses, rulers/straightedges, protractors, graph paper, and calculators/computers.

Answer formats: Unless otherwise stated in a question, each answer will be a real number. All simplified forms of the **exact** answer will be accepted. Please note that some answers cannot be reasonably expressed as integers or simplified fractions. For these answers, please use exponential or combinatorial notation as appropriate. There is no penalty for incorrect answers.

Protests: Answers will be posted at the end of each round. Protests can be submitted to the proctor until the beginning of the next round (5-15 minutes).

Collaboration:

Individual rounds: There is NO conferring or discussion between contestants. In the five minutes between the two subject tests there can be no discussion about the questions.

Team and guts rounds: Students that are on the same team are encouraged to collaborate on the questions. No collaboration is allowed between different teams.

Any individual caught cheating will earn a zero for both subject tests. Any team caught cheating will earn a zero for that round. Further action may be taken.

Terminology and Notations: See mbmt.mbhs.edu/rules

Information for Parents

How to Get Here

From the east:

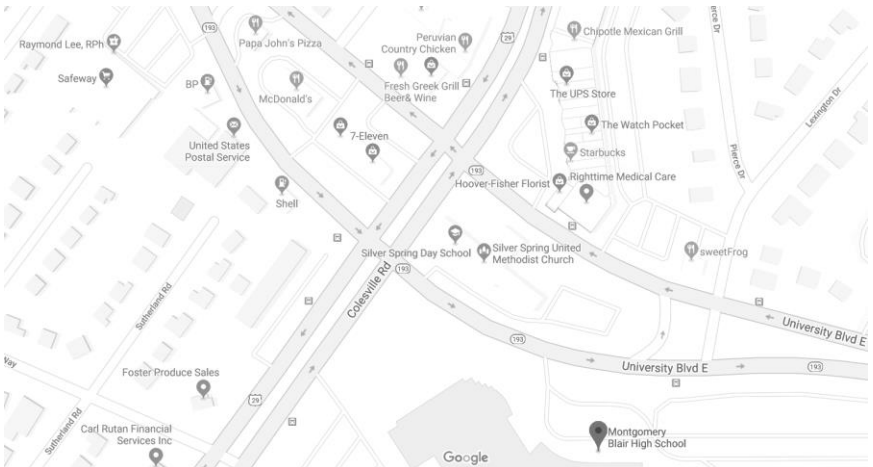
Take I-495 (Capital Beltway) West (Outer Loop) to exit 29 for MD-193 University Blvd. toward Wheaton. Destination and parking will be on the left.

From the west:

Take I-495 (Capital Beltway) East (Inner Loop) to exit 30A to US-29 N/Colesville Rd. Turn right onto University Blvd. East. Destination and parking will be on the right.

Where to Go

Local points of convenience can be found in the map below.



Participating Teams

Descartes	#	Leibniz	#
2 + 2 = 5	101	An Unnamed Cell	211
Alice Deal Team A	102	Ellicott Mills Middle	212
Alice Deal Team B	103	P.A.C.E.	213
Biggy Cheez Hummus Kiddos	105	T-series	214
Bridge Tiger	106	Macaroni & Cheeese	215
CJMS - Mix n' Math	107	Not Sure Yet	216
CJMS Cougars	108	Default BASIS McLean	221
CJSwaggaSquad	109	NBMS Individual	222
CSP Team A	110	Rarely Right	223
CSP Team B	111	Pi Men	225
CSP Team C	112	Tilden Team 1	226
CSP Team D	113	Vinci BIM us	231
CSP Team E	114	Roboster	233
Donuts aren't just for Breakfast	115	4A+M (FAM)	234
Figgy Boiz	116	Procrastination	235
FMS RoadRunners - BLUE	117	Eastern Team 4	241
FMS RoadRunners - GOLD	118	Longfellow A	242
FMS RoadRunners - NAVY	119	Bare Minimum	243
FMS RoadRunners - YELLOW	120	Blue Devil Math Crew	244
Gaithersburg MS	121	Proof by Infinite Depression	245
Generic Math	122	IKEAS	251
Haycock Elementary	123	Longfellow B	252
Haycock Elementary 2	124	Feed Me π	253
Magnificent-CJMS	126	Bonbo Bi Benbe Ben Bu Bobiba	254
Not Fast But Furious	127	Sigma	255
Pyle 2	128	NDY EMS	261
Pyle 3	129	Longfellow C	262
Siena Mathletes	130	Roberto Clemente Team A	263
sub4mathhelp	131	Edgy Veggies	264
The Denominator	132	Single Apostrophe	265
The Mill	133	Pyle 1	271
The Traffic Cones	134	Longfellow D	272
Tilden Team 2	135	Roberto Clemente Team B	273
Tilden Team 3	136	Hi IQ, I'm K. Wu	274
Tilden Team 4	137	SQRT(ANS)	275
Tracer	138	Eagle Pride	281
Wildcats Team A	139	North Bethesda Math Team	282
Wildcats Team B	140	Roberto Clemente Team C	283
		List of Tryhards	284
		We are #1	285

MBHS Student Volunteers

Captains

Haydn Gwyn
Steven Qu
Emmy Song
Jacob Stavrianos
Ambrose Yang
Shawn Zhao
Daniel Zhu

Student Volunteers & Problem Writers

Kevin Qian	Henry Ren	Jesse Silverberg
Efe Eroz	Daniel Yuan	Gabriel Wu
David Fang	Dheeraj Keshav	Rohit Harapanhalli
Chris Tong	Phillip Guo	Eva Quittman
Kevin A. Zhou	Jason Hsu	Shrjana Kunnam
Clarence Lam	Joy Song	Daniel Monroe
Eric Chen	Lawrence Tang	Douglas Chen
Alex Dong	Clark Zhang	Reynald Oliveria
Olivia Fan	Ashley Thommana	Cato Wang
Claire Zhang	Laura Cui	Timothy Qian
Vivian Li	Patrick Wang	Leo He
Chad Yu	Seung-Hyun Kwon	Simoni Mishra
Steven Su	Saleh Kemal	Kaleab Ketema

Website

Ian Rackow

T-shirt Design

Seoyoung Joo

Sound System

Alex Coy

Special Thanks To:

Mrs. Renay Johnson
MBHS Principal

Mr. Dirk Cauley
MBHS Assistant Principal

Mr. Peter Ostrander
MBHS Magnet Coordinator

Mr. Jeremy Schwartz
MBHS Math Team Sponsor

Ms. Meylin Castro De Lanzas
Magnet Secretary



Blair Magnet Foundation



Art of Problem Solving



MCPS Division of Food and Nutrition Services