

## **Tennessee Mathematics Teachers Association**

State Conference September 29 & 30, 2017

## Modeling the Standards

















## Hosted by:

Tennessee Mathematics Teachers Association & Mathematics Teachers of Tennessee Northwest at The University of Tennessee at Martin







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## **TENNESSEE MATHEMATICS TEACHERS ASSOCIATION**

#### **Executive Committee & Affiliates**

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#### TENNESSEE MATHEMATICS TEACHERS ASSOCIATION Affiliates

#### CAMTA

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#### TMATYC

Tennessee Mathematics Association for Two Year Colleges James Adair Dyersburg State Community College adair@dscc.edu

#### UETCTM

Upper East Tennessee Council of Teachers of Mathematics Amanda Cole Kingsport City Schools acole@k12k.com

#### TAMTE

Tennessee Association of Mathematics Teacher Educators Ann Assad Austin Peay State University assadd@apsu.edu

#### Keynote Speaker Trent Okerson

A native of Metropolis, Illinois, Trent Okerson joined the Weather Authority in October 2007. Trent's interest in weather stems back to his childhood, when his Papaw used to tell him that thunder was "the tater wagon tipping over." He jokes that while others would go home after school and watch cartoons, he went home and watched The Weather Channel (and also some cartoons). He says that one of the best birthday presents he ever received was when he got to come over to WPSD and meet Cal Sisto for his 6th birthday.



Prior to coming to work for Local 6, Trent spent 5½ years in education as a junior high and high school science teacher, but his love has always been weather. While teaching, he went back and began working on his education in meteorology through Mississippi State University, and interned at WPSD during the summer of 2006. In August of 2008, Trent graduated at the top of his class with his Certificate in Broadcast Meteorology. In June 2011, Trent was awarded the National Weather Association Seal of Approval.

#### State Top Ten List State Tennessee Top Ten - Algebra I

<u>Rank</u>	Score	Name	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	154	Adam Wang	Montgomery Bell Academy	Nashville	Maggie Qian
2	153	Soo Young Han	Jefferson County High School	Dandridge	Bill Delozier
2	153	Makayla Kindle	Greeneville High School	Greeneville	Annette Watts
4	151	Saksham Saksena	Houston Middle School	Germantown	Pamela Tate
5	146	Ayaka Kimura	Houston Middle School	Germantown	Pamela Tate
5	146	Kevin Liu	Houston Middle School	Germantown	Pamela Tate
7	143	Whitman Czajkowski	Siegel Middle School	Murfreesboro	Karen Dodd
8	142	Jeffrey Chang	Farragut Middle School	Knoxville	Scott Frieling
8	142	Daniel Feng	Science Hill High School	Johnson City	Justin Hyder
8	142	Stephen Hay	Greeneville High School	Greeneville	Annette Watts

#### **State Tennessee Top Ten - Geometry**

<u>Rank</u>	<b>Score</b>	Name	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	200	Emily Sun	Collierville High School	Collierville	Lauren Balentine
1	200	George Zhang	Memphis University School	Memphis	Leigh Packard
1	200	Alex Zhang	Collierville High School	Collierville	Lauren Balentine
1	200	Sam Meacham	Montgomery Bell Academy	Nashville	Matt Golenor
5	195	Rhea Charles	West Valley Middle School	Knoxville	Carole Packett
5	195	Tony Song	Hamilton Heights Christian Academy	Chattanooga	Karen Reno
5	195	Steven Qiu	Maryville Junior High School	Maryville	Scott Harness
8	191	Eliza Conner	Maryville Junior High School	Maryville	Scott Harness
9	190	Megan Underwood	Maryville Junior High School	Maryville	Scott Harness
9	190	Rulan Gu	West Valley Middle School	Knoxville	Carole Packett
9	190	Cathleen Li	Franklin Road Academy	Nashville	Ed Zaborowski
9	190	Colin Tang	Montgomery Bell Academy	Nashville	Matt Golenor

#### State Tennessee Top Ten - Algebra II

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	200	Arjun Puri	Memphis University School	Memphis	Steve Gadbois
2	196	Andrew Brady	Oak Ridge High School	Oak Ridge	George Peake
3	195	Ankush Dhar	Ravenwood High School	Brentwood	Mary Hawken
4	191	Colin Murray	Ensworth High School	Nashville	Joseph Brady
5	190	William Jackson	Christian Brothers High School	Memphis	Shawn Morgan
6	176	Luke Kronzer	Farragut High School	Farragut	Connie Vavalides
7	171	Aditya Bal	Farragut High School	Farragut	Connie Vavalides
8	168	Kichul Kang	Rossview High School	Clarksville	Jason Greene
9	167	Connor Baker	Maryville High School	Maryville	Jessica Janson
10	165	Franklin Pezzuti Dyer	Science Hill	Johnson City	Eric Wontergem
10	165	Sean Yang	Houston High School	Germantown	Jenna Kitchens

#### TENNESSEE MATHEMATICS TEACHERS ASSOCIATION

#### **State Tennessee Top Ten - Statistics**

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<b>Teacher</b>
1	167	Mike Miccioli	Montgomery Bell Academy	Nashville	Sean Jackson
2	163	Veera Devarasetty	Brentwood High School	Brentwood	Jerry Stelmaszak
2	163	Namrah Ajmal	Brentwood High School	Brentwood	Jerry Stelmaszak
4	157	Quinn Cunneely	Brentwood High School	Brentwood	Jerry Stelmaszak
4	157	Connor Novak	Brentwood High School	Brentwood	Jerry Stelmaszak
6	145	Melody Guo	Oak Ridge High School	Oak Ridge	Thomas Froning
7	144	Nicholas Hayes	Collierville High School	Collierville	Matthew Holmes
8	143	Maclain Aslinger	McCallie School	Chattanooga	Bryon McCagne
9	139	Anna Sun	White Station High School	Memphis	Susan Campbell
10	138	Spencer Flint	Farragut High School	Farragut	Elaine Wolfe
10	138	Juliana Pulsinelli	Bearden High School	Knoxville	Ernie Roberts

#### **State Tennessee Top Ten - Precalculus**

1191Kevin LuWhite Station High SchoolMemphisYanli Cui2178Ethan BradyOak Ridge High SchoolOak RidgeElaine Vaughan3176Xinyi TanWhite Station High SchoolMemphisYanli Cui4173Vincent WangHouston High SchoolGermantownAshley Coates5172Adam Von ArnimFarragut High SchoolFarragutAngela Buckman5172Forest CheuFarragut High SchoolFarragutAngela Buckman7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter10168Konnor PorterSeymour High SchoolSeymourPaula Nichols	<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
3176Xinyi TanWhite Station High SchoolMemphisYanli Cui4173Vincent WangHouston High SchoolGermantownAshley Coates5172Adam Von ArnimFarragut High SchoolFarragutAngela Buckman5172Forest CheuFarragut High SchoolFarragutAngela Buckman7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	1	191	Kevin Lu	White Station High School	Memphis	Yanli Cui
4173Vincent WangHouston High SchoolGermantownAshley Coates5172Adam Von ArnimFarragut High SchoolFarragutAngela Buckman5172Forest CheuFarragut High SchoolFarragutAngela Buckman7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	2	178	Ethan Brady	Oak Ridge High School	Oak Ridge	Elaine Vaughan
5172Adam Von ArnimFarragut High SchoolFarragutAngela Buckman5172Forest CheuFarragut High SchoolFarragutAngela Buckman7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	3	176	Xinyi Tan	White Station High School	Memphis	Yanli Cui
5172Forest CheuFarragut High SchoolFarragutAngela Buckman7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	4	173	Vincent Wang	Houston High School	Germantown	Ashley Coates
7171Spencer WilliamsWebb School of KnoxvilleKnoxvilleTeresa Sexton8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	5	172	Adam Von Arnim	Farragut High School	Farragut	Angela Buckman
8170Anming GuWhite Station High SchoolMemphisYanli Cui8170Frank TianBattle Ground AcademyFranklinLeean Luter	5	172	Forest Cheu	Farragut High School	Farragut	Angela Buckman
8 170 Frank Tian Battle Ground Academy Franklin Leean Luter	7	171	Spencer Williams	Webb School of Knoxville	Knoxville	Teresa Sexton
	8	170	Anming Gu	White Station High School	Memphis	Yanli Cui
10 168 Konnor Porter Seymour High School Seymour Paula Nichols	8	170	Frank Tian	Battle Ground Academy	Franklin	Leean Luter
	10	168	Konnor Porter	Seymour High School	Seymour	Paula Nichols
10 168 Frank Staudaest Farragut High School Farragut Angela Buckman	10	168	Frank Staudaest	Farragut High School	Farragut	Angela Buckman
10168Yuxi LongMcCallie SchoolChattanoogaRobert Lyons	10	168	Yuxi Long	McCallie School	Chattanooga	Robert Lyons

#### State Tennessee Top Ten - Calculus & Advanced Topics

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	186	Allen Liu	McCallie School	Chattanooga	Robert Lyons
2	185	Jackson Moody	Memphis University School	Memphis	Nancy Gates
3	175	Levi Evans	White Station High School	Memphis	Yanli Cui
4	174	Kelsi Burt	Tullahoma High School	Tullahoma	Frank Vanzant
5	171	Joseph Andress	Oak Ridge High School	Oak Ridge	Deanna Pickel
6	170	Joon Sung Park	Brentwood High School	Brentwood	Jerry Stelmaszak
7	167	Chang Yu	Memphis University School	Memphis	Steve Gadbois
8	165	Micah White	Montgomery Bell Academy	Nashville	Bill Compton
9	163	Zirui Zhou	Farragut High School	Farragut	Wanda Lacy
10	161	Chiraag Kaushik	Brentwood High School	Brentwood	Jerry Stelmaszak

## **Regional Top Ten Lists**

#### East Tennessee Top Ten - Algebra I

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	153	Soo Young Han	Jefferson County High School	Dandridge	Bill Delozier
1	153	Makayla Kindle	Greeneville High School	Greeneville	Annette Watts
3	142	Jeffrey Chang	Farragut Middle School	Knoxville	Scott Frieling
3	142	Daniel Feng	Science Hill High School	Johnson City	Justin Hyder
3	142	Stephen Hay	Greeneville High School	Greeneville	Annette Watts
6	138	Christine Liang	Science Hill High School	Johnson City	Catherine White
7	132	Helen Hoye	Science Hill High School	Johnson City	Glenda Connor
8	131	Yingqi Liu	Hamilton Heights Christian Academy	Chattanooga	Karen Reno
9	129	James Robertson	Maryville Junior High	Maryville	Logan Goodin
10	128	Vivian Chen	Maryville Junior High	Maryville	Logan Goodin
10	128	Jacob Fanihos	Farragut Middle School	Knoxville	Randall Swartzentruber

#### East Tennessee Top Ten - Geometry

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	195	Rhea Charles	West Valley Middle School	Knoxville	Carole Packett
1	195	Tony Song	Hamilton Heights Christian Academy	Chattanooga	Karen Reno
1	195	Steven Qiu	Maryville Junior High School	Maryville	Scott Harness
4	191	Eliza Connor	Maryville Junior High School	Maryville	Scott Harness
5	190	Megan Underwood	Maryville Junior High School	Maryville	Scott Harness
5	190	Rulan Gu	West Valley Middle School	Knoxville	Carole Packett
7	187	Paxtyn Lawson	Morristown Hamblen High School East	Morristown	Vicki Bible
8	185	Kevin Li	Jefferson Middle School	Dandridge	Rachel Huan
9	182	Will Combs	William Blount High School	Maryville	Mrs. Heath
10	181	Andrew Sanders	Maryville Junior High School	Maryville	Scott Harness

#### East Tennessee Top Ten - Algebra II

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	196	Andrew Brady	Oak Ridge High School	Oak Ridge	George Peake
2	176	Luke Kronzer	Farragut High School	Knoxville	Connie Vavalides
3	171	Aditya Bal	Farragut High School	Knoxville	Connie Vavalides
4	167	Connor Baker	Maryville High School	Maryville	Steve Koontz
5	165	Franklin Pezzuti Dyer	Science Hill	Johnson City	Eric Wontergem
6	161	Alissa Gordon	Maryville High School	Maryville	Steve Koontz
7	160	Vijay Ananthula	University School	Johnson City	Barbara Bishop
8	153	Katherine Chen	Farragut High School	Knoxville	Connie Vavalides
8	153	Alex Mays	Maryville High School	Maryville	Nick Kessler
8	153	Rachel Sheffer	Lenior City High School	Lenior City	Stephanie Guth

#### TENNESSEE MATHEMATICS TEACHERS ASSOCIATION

#### **East Tennessee Top Ten - Statistics**

<u>Rank</u>	<u>Score</u>	Name	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	145	Melody Guo	Oak Ridge High School	Oak Ridge	Thomas Froning
2	143	Maclain Aslinger	McCallie School	Chattanooga	Bryon McCagne
3	140	Spencer Flint	Farragut High School	Knoxville	Elaine Wolfe
4	138	Juliana Pulsinelli	Bearden High School	Knoxville	Ernie Roberts
5	137	Steven Qu	Oak Ridge High School	Oak Ridge	Jessica Williams
6	133	Daniel Choo	Farragut High School	Knoxville	Elaine Wolfe
7	124	Joseph Broady	Webb School of Knoxville	Knoxville	Teresa Sexton
7	124	Zeyun Wang	Science Hill	Johnson City	Floyd Brown
9	123	William Rutledge	Morristown Hamblen High School West	Morristown	Brian McLaughlin
10	122	Matthew Jansen	Bearden High School	Knoxville	Ernie Roberts

#### East Tennessee Top Ten - PreCalculus

<u>Rank</u>	<u>Score</u>	Name	School	<u>City</u>	<u>Teacher</u>
1	178	Ethan Brady	Oak Ridge High School	Oak Ridge	Elaine Vaughan
2	173	Konnor Porter	Seymour High School	Seymour	Paula Nichols
3	172	Adam Von Arnim	Farragut High School	Knoxville	Angela Buckman
3	172	Forest Cheu	Farragut High School	Knoxville	Angela Buckman
5	171	Spencer Williams	Webb School of Knoxville	Knoxville	Teresa Sexton
6	168	Frank Staudaest	Farragut High School	Knoxville	Angela Buckman
6	168	Yuxi Long	McCallie School	Chattanooga	Robert Lyons
8	167	Arnab Dey	Dobyns-Bennet High School	Kingsport	Cynthia Silvey
9	162	Andrew Whitinger	Sullivan South High School	Kingsport	Tori Haile
10	161	Daniel Zetterberg	Farragut High School	Knoxville	Elaine Wolfe
10	161	Yuchen Jing	Farragut High School	Knoxville	Angela Buckman

#### East Tennessee Top Ten – Calculus and Advanced Topics

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	186	Allen Liu	McCallie School	Chattanooga	Rob Lyons
2	171	Joseph Andress	Oak Ridge High School	Oak Ridge	Deanna Pickel
3	163	Zirui Zhou	Farragut High school	Knoxville	Wanda Lacy
4	160	Nikhil Virani	McCallie School	Chattanooga	Rob Lyons
5	155	Henry Shen	Oak Ridge High School	Oak Ridge	Deanna Pickel
5	155	Elliot Fang	Farragut High school	Knoxville	Wanda Lacy
7	153	Erika Yang	Farragut High school	Knoxville	Wanda Lacy
8	149	Michael Lin	Farragut High school	Knoxville	Wanda Lacy
9	148	William Andress	Oak Ridge High School	Oak Ridge	Jessica Williams
10	147	Tolson Bell	Webb School of Knoxville	Knoxville	Teresa Sexton

#### Middle Tennessee Top Ten - Algebra I

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	154	Adam Wang	Montgomery Bell Academy	Nashville	Maggie Qian
2	143	Whitman Czajkowski	Siegel Middle School	Murfreesboro	Karen Dodd
3	139	Vincent Corvia	West Middle School	Tullahoma	Faye Neel
4	136	Bill Ouyang	Montgomery Bell Academy	Nashville	Maggie Qian
5	134	Michael Ashburn	Stone Memorial High School	Crossville	Jamie Rossman
6	130	Erica Friedman	University School of Nashville	Nashville	Sarah Ice
7	128	Daniel Puckett	Dekalb County High School	Smithville	Andrew Dixon
8	126	Preston McGee	West Middle School	Tullahoma	Faye Neel
9	123	John Myers	Harding Academy	Nashville	Jacob Madden
9	123	Belle Huang	Harpeth Hall	Nashville	Maureen Hill

#### Middle Tennessee Top Ten - Geometry

Rank	Score	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	200	Sam Meacham	Montgomery Bell Academy	Nashville	Matt Golenor
2	190	Cathleen Li	Franklin Road Academy	Nashville	Ed Zaborowski
2	190	Colin Tang	Montgomery Bell Academy	Nashville	Matt Golenor
3	187	Jason Zhu	Montgomery Bell Academy	Nashville	Matt Golenor
4	185	Kim Jinsun	Franklin High School	Franklin	Joe Rietveld
5	177	Jiahua Wang	The Webb School	Bell Buckle	Joe Griggs
6	173	Henry Sprouse	Hendersonville High School	Hendersonville	James Beasley
7	172	Dan McGuire	Montgomery Bell Academy	Nashville	David Deutsch
8	171	Matthew Milam	Montgomery Bell Academy	Nashville	Matt Golenor
9	170	Ashwath Nayagadurai	Martin Luther King Magnet	Nashville	Anna Dailey
9	170	Joonyoung Im	Rossview High School	Clarksville	Jason Greene

#### Middle Tennessee Top Ten - Algebra II

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	195	Ankush Dhar	Ravenwood High School	Brentwood	Mary Hawken
2	191	Colin Murray	Ensworth High School	Nashville	Joseph Brady
3	168	Kichul Kang	Rossview High School	Clarksville	Jason Greene
4	160	Ethan Coburn	Lipscomb Academy High School	Nashville	Meredith Brocklebank
5	159	Thomas Zeuthen	Montgomery Bell Academy	Nashville	John Lanier
6	155	Matt Hawkins	Montgomery Bell Academy	Nashville	Maggie Qian
7	154	Siyuan Zhang	Portland High School	Portland	Janet Smith
8	153	Bob Qian	Martin Luther King Magnet	Nashville	David Tullis
9	151	Mrinmoyee Kalasikam	Ravenwood High School	Brentwood	Mary Hawken
10	150	Cheoneui Park	Ravenwood High School	Brentwood	Mary Hawken
10	150	Kevin Zhang	Davidson Academy	Nashville	Susan Castleberry
10	150	Ian Dilick	Pope John Paul II	Hendersonville	Amanda Peper

## Middle Tennessee Top Ten - Statistics

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	167	Mike Miccioli	Montgomery Bell Academy	Nashville	Sean Jackson
2	163	Veera Devarasetty	Brentwood High School	Brentwood	Jerry Stelmaszak
2	163	Namrah Ajmal	Brentwood High School	Brentwood	Jerry Stelmaszak
3	157	Quinn Cunneely	Brentwood High School	Brentwood	Jerry Stelmaszak
3	157	Connor Novak	Brentwood High School	Brentwood	Jerry Stelmaszak
4	128	Owen Atkinson	Brentwood High School	Brentwood	Jerry Stelmaszak
5	125	Emily Jenkins	Harpeth Hall School	Nashville	David Griswold
6	124	Tyler Hart	Independence High School	Thompson's Station	Magan Hardin
6	124	Natalie Joseph	Ravenwood High School	Brentwood	Suzanne Nuccio
7	123	Hannah Thomas	Hendersonville High School	Hendersonville	Angela Stiles

#### Middle Tennessee Top Ten - PreCalculus

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	170	Frank Tian	Battle Ground Academy	Franklin	Leean Luter
2	163	Moussa Mikhail	Hume-Fogg Magnet High School	Nashville	Elizabeth Metts
3	162	Sam DeCoster	Montgomery Bell Academy	Nashville	Mike Davidson
4	151	Kate Sanborn	Franklin High School	Franklin	Laurie Sims
5	150	Elizabeth Qiao	Brentwood High School	Brentwood	Christie Feiler
6	149	William Wallace	Ensworth High School	Nashville	Sharon Glenn
7	146	Yi Qu	Brentwood High School	Brentwood	Jerry Stelmaszak
7	146	William Welch	Lipscomb Academy High School	Nashville	Amy Bowling
8	141	Madison Dochety	Tullahoma High School	Tullahoma	Kimberly Carter
9	140	Andrew Bulgarino	Montgomery Bell Academy	Nashville	John Lanier

#### Middle Tennessee Top Ten – Calculus and Advanced Topics

Rank	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<b>Teacher</b>
1	174	Kelsi Burt	Tullahoma High School	Tullahoma	Frank Vanzant
2	170	Joon Sung Park	Brentwood High School	Brentwood	Jerry Stelmaszak
3	165	Micah White	Montgomery Bell Academy	Nashville	Bill Compton
4	161	Chiraag Kaushik	Brentwood High School	Brentwood	Jerry Stelmaszak
5	155	Tony Huang	Montgomery Bell Academy	Nashville	David Phillippi
6	154	Jonathan Dean	Cookeville High School	Cookeville	Brian O'Connor
6	154	Stephen Quiton	Franklin High School	Franklin	Tracy Harmon
7	153	Jack O'Donohue	Franklin High School	Franklin	Tracy Harmon
7	153	Arjun Keerthi	Brentwood High School	Brentwood	Jerry Stelmaszak
7	153	Barbara Xiong	University School of Nashville	Nashville	Justin Fitzpatrick

## West Tennessee Top Ten - Algebra I

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	151	Saksham Saksena	Houston Middle School	Germantown	Pamela Tate
2	146	Ayaka Kimura	Houston Middle School	Germantown	Pamela Tate
3	146	Kevin Liu	Houston Middle School	Germantown	Pamela Tate
4	140	Yuka Kimura	Houston Middle School	Germantown	Pamela Tate
5	138	Cooper Grinspun	Memphis University School	Memphis	Shawn Abel
6	134	Forest Rudd	Memphis University School	Memphis	Shawn Abel
7	132	Ian Keith	Brighton High School	Brighton	Carrie Sherfield
8	125	Kerry Zhao	Memphis University School	Memphis	Shawn Abel
9	124	Kimberly Kerr	Lausanne Collegiate School	Memphis	Jill Damplo
10	120	Will Woodmansee	Memphis University School	Memphis	Shawn Abel

#### West Tennessee Top Ten - Geometry

<u>Rank</u>	Score	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	200	Emily Sun	Collierville High School	Collierville	Lauren Balentine
1	200	George Zhang	Memphis University School	Memphis	Leigh Packard
1	200	Alex Zhang	Collierville High School	Collierville	Lauren Balentine
4	186	Samuel Paul	Memphis University School	Memphis	Leigh Packard
4	186	Major Glenn	Houston High School	Germantown	Sharon Reeder
6	182	Subhash Eedarapalli	Collierville High School	Collierville	Lauren Balentine
7	181	Cullen Lonergan	Memphis University School	Memphis	Leigh Packard
8	180	Megan Liu	Collierville High School	Collierville	Lauren Balentine
9	178	Jaqueline Lee	Lausanne Collegiate School	Memphis	Jill Damplo
10	175	Frank Colvett	Memphis University School	Memphis	Leigh Packard

#### West Tennessee Top Ten - Algebra II

<u>Rank</u>	<b>Score</b>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	200	Arjun Puri	Memphis University School	Memphis	Steve Gadbois
2	190	William Jackson	Christian Brothers High School	Memphis	Shawn Morgan
3	165	Sean Yang	Houston High School	Germantown	Jenna Kitchens
4	164	Jack Jerit	Christian Brothers High School	Memphis	Shawn Morgan
5	157	Kester Nucum	Henry County High School	Paris	Beth Weed
5	157	Robert McFadden	Memphis University School	Memphis	Steve Gadbois
7	155	Tyler Bruno	University School of Jackson	Jackson	Don Newman
8	153	Blake Lawler	Christian Brothers High School	Memphis	Shawn Morgan
9	150	Anjali Mahajan	University School of Jackson	Jackson	Don Newman
10	148	Cady Baltz	Houston High School	Germantown	Jenna Kitchens

## West Tennessee Top Ten - Statistics

<u>Rank</u>	<u>Score</u>	<u>Name</u>	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	144	Nicholas Hayes	Collierville High School	Collierville	Matthew Holmes
2	139	Anna Sue	White Station High School	Memphis	Susan Campbell
3	133	Andrew Wu	White Station High School	Memphis	Susan Campbell
4	117	Sofia Murtaugh	White Station High School	Memphis	Susan Campbell
5	115	Caroline Ciaramitaro	Saint Mary's Episcopal School	Memphis	Jeff McCalla
6	114	Adalyn Meeks	Saint Mary's Episcopal School	Memphis	Jeff McCalla
7	111	Fengbo Zhao	White Station High School	Memphis	Susan Campbell
8	107	Emily Roy	White Station High School	Memphis	Susan Campbell
9	102	Yumin Lee	Collierville High School	Collierville	Matthew Holmes
10	97	Caitlin O'Connor	Collierville High School	Collierville	Matthew Holmes

#### West Tennessee Top Ten - PreCalculus

<u>Rank</u>	<u>Score</u>	Name	<u>School</u>	<u>City</u>	<b>Teacher</b>
1	191	Kevin Luo	White Station High School	Memphis	Yanli Cui
2	176	Xinyi Tan	White Station High School	Memphis	Yanli Cui
3	173	Vincent Wang	Houston High School	Germantown	Ashley Coates
4	170	Anming Gu	White Station High School	Memphis	Yanli Cui
5	156	Benjamin Freeman	Memphis University School	Memphis	Mike Gunn
6	155	Jonathan Zhang	White Station High School	Memphis	Yanli Cui
7	153	Stephanie Wang	White Station High School	Memphis	Yanli Cui
8	142	Elaine Fu	Houston High School	Germantown	Ashley Coates
9	142	Will Hamic	Lausanne Collegiate School	Memphis	John Brewster
10	140	Nicolas Beine	Briarcrest Christian School	Eads	Annette Hardcastle

#### West Tennessee Top Ten – Calculus and Advanced Topics

<u>Rank</u>	<b>Score</b>	Name	<u>School</u>	<u>City</u>	<u>Teacher</u>
1	185	Jackson Moody	Memphis University School	Memphis	Nancy Gates
2	175	Levi Evans	White Station High School	Memphis	Yanli Cui
3	167	Chang Yu	Memphis University School	Memphis	Steve Gadbois
4	158	Akaash Padmanabha	Collierville High School	Collierville	Ivonne Bentley
5	150	John Stanford	University School of Jackson	Jackson	Don Newman
5	150	Angus McKee	White Station High School	Memphis	Yanli Cui
5	150	Richard Li	Collierville High School	Collierville	Ivonne Bentley
8	145	Riggs Markham	Christian Brothers High School	Memphis	Dustin Perry
9	144	Joseph Stafford	Lausanne Collegiate School	Memphis	John Brewster
10	142	Jackson Howell	Memphis University School	Memphis	Nancy Gates

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TENNESSEE MATHEMATICS TEACHERS ASSOCIATION

#### Just for Fun—Puzzles and Problems

A "1000-year" storm hit the state of Louisiana, dropping nearly 7 trillion gallons (26 trillion liters) of water the week of August 8, 2016. That is equivalent to three times the amount of water that accompanied Hurricane Katrina. To put this number into perspective, let's look at how much water an individual uses per year. According to the **Proceedings of the National Academy of Sciences**, the average person uses 2500 cubic meters of water per year. If the water from this storm was all collected (and purified), how many people could it support for one week?

Source: Expii, <u>https://www.expii.com/solve/38/1</u>

A single 3cm ice cube is placed in a perfectly cylindrical glass of water of diameter 7cm. Using Archimedes' Principle (the buoyant force on the ice cube equals the weight of the volume of water it displaces), estimate how much the water level changes after the ice melts.

Source: Expii, https://www.expii.com/solve/38/2

If you slice through a unit cube in just the right place, the intersection between the plane and the cube is a regular hexagon. Suppose that before the slicing, the unit cube had a regular tetrahedron inside, each of whose four vertices was also a vertex of the cube. After the slicing, what is the volume of the larger piece of the tetrahedron which is formed by the slice?



Source: Expii, https://www.expii.com/solve/37/4

The Death Star, a galactic superweapon that can destroy planets with its laser, has a diameter of about 150 kilometers, with a 2-meter-wide exhaust port at the bottom. This design is incredibly energy-efficient, because nearly all of the energy generated by the reactor is converted into the superlaser's light, and only a tiny fraction is dissipated as exhaust heat. To compare this with today's technology, suppose that we can build a version 50 meters in diameter, with a 1-meter-wide exhaust port. If we used this level of technology to power a 150-kilometer-diameter version, where power output grows proportionally with the volume, what fraction of the surface area will be taken up by the exhaust port?

Source: Expii, https://www.expii.com/solve/54/2

You have a large cubical box which contains 1000 cubical chocolates, arranged in a 10x10x10 grid pattern, each in an individual box. You have to decide if you want to wrap the large box or wrap each of the individual boxes. What is the ratio of the amount of wrapping paper needed for individually wrapping the 1000 smaller boxes, over the amount of wrapping paper needed to wrap the single large box?

Source: Expii, https://www.expii.com/solve/55/1

The Fifteen Game has two players, taking turns picking a number from 1 through 9 on each turn. Once a number has been picked, it cannot be picked again by either player. As soon as a player has a set of numbers which contain three distinct numbers that sum to exactly 15, that player wins and the game ends immediately. Suppose that you go first and picked 7, your opponent picked 5, you then picked 4, and your opponent then picked 3. What is the next number that you should pick?

Source: Expii, https://www.expii.com/solve/37/2

Rap music blends lyrics and rhythm, with an underlying structure. Rap song lyrics are measured in bars, each of which contains 4 beats, and corresponds to one line of the song. The first syllable in each bar is more heavily stressed to establish the rhythm. A song often starts with a 4–8 bar intro, and then goes into 16-bar verses, each followed by an 8-bar hook, and finishes with an 8–16 bar outro. At a tempo of 90 beats per minute, if a rap song is about 4 minutes long, how many verses will it contain?

#### Source: Expii, https://www.expii.com/solve/52/3

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You have four interlocking cubes, and you want to use these cubes to build a structure. How many different structures can you build using these four cubes? Assume that the structures are built so that the shared faces of adjoining cubes are completely covered. Use the graph paper below to draw your structures. Beware of structures that are rotations of structures you have already found.

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