

# Al Kalfus Long Island Math Fair

## April 15, 2016

### Final Round

### Hofstra University

#### Long Island Math Fair Committee

Joyce Bernstein, Alan Blayne, Christine Brown, Jerry Chen, Ian Dunst, Arulappah Eswarathasan, Martha Green, Lynda Hennig, Lucille Hunter, Richard Hunter, Nat Janoff, Marlene Kalfus, M.C. Kim, Maxine Lifshitz, Christine Pette, Joseph Quartararo, Paulette Quartararo, Jane Sessler, Sylvia Silberger, Terry Springer, Charles Windwer

In Memory of our Founder Alfred Kalfus

#### Long Island Math Fair Sponsors

Hofstra University and the Suffolk County Mathematics Teachers Association, the Nassau County Mathematics Teachers Association, and the Nassau County Association of Mathematics Supervisors

#### Program

**3:00 pm Judges pick up students at Student Center and walk to assigned room**

**3:30-5:30 pm Judging**

**5:30-6:45 pm Dinner Break**

**6:45-8:00 pm Awards Assembly**

**Grades 7, 8, 9 and Teams Grades 7, 8: Multipurpose Room- Student Center**

**Grades 10, 11, 12: Theatre- Student Center**

#### Building Key

|     |              |    |     |               |    |     |               |    |
|-----|--------------|----|-----|---------------|----|-----|---------------|----|
| A   | Adams        | 23 | BA  | Barnard       | 29 | BR  | Breslin       | 37 |
| BRW | Brower       | 41 | C   | Calkins       | 33 | CHP | Berliner Hall | 59 |
| D   | Davison      | 28 | GAL | Galwing       | 44 | HA  | Hauser        | 25 |
| HE  | Heger        | 43 | HGN | Hagedorn Hall | 63 | L   | Lowe          | 24 |
| M   | Monroe       | 60 | MA  | Mason         | 44 | ME  | Memorial      | 26 |
| N   | Netherlands  | 11 | R   | Roosevelt     | 34 | S   | Starr         | 62 |
| SC  | Student Cntr | 13 | W   | Weed          | 22 |     |               |    |

#### Special Thanks

We would like to give special thanks to Arulappah Eswarathasan and Sylvia Silberger for all the on-site planning at Hofstra University for this year's Fair.

| <u>Judge's Name</u> |           | <u>School</u>                      |
|---------------------|-----------|------------------------------------|
| Akbik               | Safwan    | Hofstra University                 |
| Alt                 | Matthew   | HAFTR                              |
| Andrejkovics        | Mike      | Northport High School              |
| Arengo              | Sebastian | Long Beach Middle School           |
| Armstrong           | Lillian   | Jericho High School                |
| Barrera             | Christina | Manhasset High School              |
| Beck                | Bruce     | Doshi Stem                         |
| Beltrani            | Laura     | Northport High School              |
| Berrios             | Melinda   | Hicksville High School             |
| Bowen               | Christian | Kennedy High School                |
| Breckner            | Steve     | Nassau Community College           |
| Burt                | Alexander | Friends Academy                    |
| Callahan            | Chris     | Roslyn High School                 |
| Campanelli          | Gary      | Half Hollow Hills High School East |
| Carlson             | Michael   | East Moriches School               |
| Carman              | Mark      | Roslyn High School                 |
| Castillo            | Belen     | Roslyn Middle School               |
| Cetron              | Jason     | Hicksville High School             |
| Chae                | John      | Syosset High School                |
| Chiarenza           | Jillian   | Friends Academy                    |
| Choi                | Sunny     | Herricks High School               |
| Cippolino           | Mike      | South Woods Middle School          |
| Clarkson            | Stephanie | Northport Middle School            |
| Considine           | Christine | Northport High School              |
| Corona              | Ed        | North Shore High School            |
| Cote                | Maria     | Herricks High School               |
| DeCicco             | Michele   | Herricks Middle School             |
| DeMaio              | Karen     | Hauppauge Middle School            |
| DeMarinis           | Matt      | Jericho High School                |
| Dietrich            | Nichole   | Northport High School              |
| DiMeola             | Amy       | North Shore Middle School          |
| Dinowitz            | Jonathan  | Wheatley School                    |
| DiVenuto            | Ray       | Schreiber High School              |
| Estrada             | Alvin     | Nassau Community College           |
| Faibish             | Renee     | HAFTR                              |
| Falcone             | Tiffany   | North Shore Middle School          |
| Falussy             | Jean      | Candlewood Middle School           |
| Fonseca             | Loretta   | Roslyn Middle School               |
| Forte               | Michael   | Nassau Community College           |
| Frayler             | Kristin   | North Shore Middle School          |

| <u>Judge's Name</u> |            | <u>School</u>                      |
|---------------------|------------|------------------------------------|
| Gabalski            | GINNA      | East Meadow High School            |
| Gadamowitz          | Rob        | Wheatley School                    |
| Gallagher           | Tina       | Schrieber High School              |
| Gerver              | Julie      | North Shore High School            |
| Gerver              | Linda      | North Shore High School            |
| Gerver              | Michael    | North Shore High School            |
| Gerver              | Rob        | North Shore High School            |
| Getchell            | Donna      | Garden City High School            |
| Gizzi               | Gabriella  | Roslyn Middle School               |
| Goldbeck            | Dan        | Syosset High School                |
| Goldman             | Lee        | Half Hollow Hills High School East |
| Gorman              | Bryan      | Schreiber High School              |
| Greene              | Nora       | North Shore Hebrew Academy         |
| Greenwell           | Raymond    | Hofstra University                 |
| Gropf               | Thomas     | Woodland Middle School             |
| Halpin              | Pam        | North Shore Middle School          |
| Hand                | Alex       | Herricks High School               |
| Handelman           | Leona      | West Hollow Middle School          |
| Hart                | Stacy      | Herricks Middle School             |
| Haush               | Karen      | Jericho High School                |
| Hayes               | Peter      | ICPS                               |
| Herber              | Jennifer   | St. John's University              |
| Ho                  | Trisha     | Herricks High School               |
| Hu-Hyneman          | Vera       | Suffolk Community College          |
| Huntley             | Renee      | Roslyn Middle School               |
| Janoff              | Nat        | Math Fair Committee                |
| Javadi              | Mohammad   | Nassau Community College           |
| Kahn                | Jill       | Jericho High School                |
| Kamara              | Liz        | Schreiber High School              |
| Kavner              | Amanda     | Half Hollow Hills High School East |
| Keenan              | David      | North Shore Middle School          |
| Kelly               | Eileen     | Oceanside High School              |
| Kelly               | Weisenseel | Lawrence Middle School             |
| Kessler             | Ellen      | Doshi Stem                         |
| Khan                | Alyssa     | Herricks Middle School             |
| Khan                | Nasir      | Freeport High School               |
| Kim                 | M.C.       | Math Fair Committee/ SCC           |
| Kirkup              | Debbie     | Kennedy High School                |
| Klikovac            | Ida        | Nassau Community College           |
| Koenig              | Rich       | Manhasset High School              |

| <b>Judge's Name</b> |            | <b>School</b>                      |
|---------------------|------------|------------------------------------|
| Kriegstein          | Helene     | Jericho High School                |
| Kundzins            | Laura      | Manhasset High School              |
| Labrocca            | Ron        | Hicksville High School             |
| LaSpina             | Leon       | Bethpage High School               |
| Lee                 | Mona       | Manhasset High School              |
| Lee                 | Soowook    | Rolsyn High School                 |
| Lesser              | Jeff       | Wheatley School                    |
| Lester              | Teri       | East Meadow High School            |
| Libassi             | Mindy      | Western Suffolk Boces              |
| Ligouri             | Matt       | Huntington High School             |
| Lin                 | Nancy      | North Shore Middle School          |
| Litvack             | Alison     | Herricks High School               |
| Mackin              | Cathy      | North Shore High School            |
| Mahoney             | Sean       | Commack High School                |
| Mammo               | Behailu    | Hofstra University                 |
| Mantel              | Abe        | Hofstra University                 |
| Marc                | Susan      | Kennedy High School                |
| Marcellino          | Ally       | South Woods Middle School          |
| Maritato            | Karen      | East Northport Middle School       |
| Maus                | John       | North Shore High School            |
| Mazzarino           | Christine  | Lawrence High School               |
| McBride             | Heather    | Half Hollow Hills High School East |
| McDonagh            | Christine  | East Northport Middle School       |
| McGinn              | Donna      | Northport Middle School            |
| McGlynn             | Cassandra  | Woodmere Middle School             |
| McNamara            | Paul       | Thompson Middle School             |
| Meyers              | Kevin      | Wheatley School                    |
| Milana              | Nancy      | Manhasset High School              |
| Mohammed            | Alysha     | West Hollow Middle School          |
| Mojoca              | Ana        | Elmont High School                 |
| Moore               | Kathy      | Northport Middle School            |
| Morris-Gill         | Colleen    | Holy Trinity High School           |
| Moss                | William    | Lawrence High School               |
| Nuccio              | Doug       | Herricks Middle School             |
| Oehrlein            | Helen      | Portledge School                   |
| Oglesby             | Angela     | Nassau Community College           |
| O'Rourke            | Erin       | Syosset High School                |
| Pawloski            | Christina  | Commack High School                |
| Pellett             | Mary Clare | Holy Trinity High School           |
| Perico              | Anthony    | Northport High School              |

| <b>Judge's Name</b> |             | <b>School</b>                      |
|---------------------|-------------|------------------------------------|
| Petras              | Laura       | Manhasset High School              |
| Pillar              | Emily       | Schreiber High School              |
| Pisciotta           | Deanna      | Woodmere Middle School             |
| Polan               | Sondra Lee  | East Meadow High School            |
| Pollen              | Meryl       | West Hollow Middle School          |
| Pournazari          | Mahmood     | Nassau Community College           |
| Reiss               | Cara        | Freeport High School               |
| Ring                | Paul        | Clarke High School                 |
| Ringhoff            | Lisa        | East Moriches School               |
| Rogala              | Ashley      | Wheatley School                    |
| Rogala              | Brooke      | North Shore High School            |
| Ruczaj              | Brittany    | MacArthur High School              |
| Ruthkowski          | Brian       | Northport High School              |
| Salatti             | Christopher | Holy Trinity High School           |
| Scarisbrick         | Colleen     | Lawrence Middle School             |
| Schaentzler         | Eileen      | Smithtown High School West         |
| Scheuerman          | Greg        | South Woods Middle School          |
| Schroeder           | Mallory     | North Shore Middle School          |
| Scott               | Erik        | Roslyn Middle School               |
| Shannon             | Melissa     | Jericho High School                |
| Shea                | Thomas      | Commack High School                |
| Silverstone         | Robert      | Hofstra University                 |
| Sinclair            | Marissa     | Jericho High School                |
| Skurnick            | Ron         | Nassau Community College           |
| Smith               | Carolyn     | Roslyn Middle School               |
| Smith               | Jim         | Oceanside High School              |
| Soto                | Marisol     | Lawrence High School               |
| Soundias            | Natasha     | Woodland Middle School             |
| Spiegel             | Elizabeth   | Herricks High School               |
| Steffens            | Josh        | Roslyn High School                 |
| Stramiello          | Dennis      | Nassau Community College           |
| Suarez              | Rose        | Half Hollow Hills High School East |
| Temme               | Stephen     | Copiague Middle School             |
| Vallone             | Joseph      | Suffolk Community College          |
| van Nieuwenhuizen   | Marie       | Great Neck North High School       |
| Wallad              | Carrie-Ann  | Herricks High School               |
| Wayne               | David       | Hofstra University                 |
| Winter              | Patrick     | Northport Middle School            |
| Wong                | Nicole      | Syosset High School                |
| Xavier              | Nancy       | Oceanside Middle School            |

| <u>Last Name</u>                | <u>First Name</u> | <u>Grade</u> | <u>Team</u> | <u>Topic</u>                                     | <u>Room</u> |
|---------------------------------|-------------------|--------------|-------------|--|-------------|
| <b>Bethpage High School</b>     |                   |              |             |  |             |
| Maiti                           | Soham             | 9            |             | Time Dilation and Length Contradiction           | R13         |
| <b>Candlewood Middle School</b> |                   |              |             |  |             |
| Mehta                           | Ojas              | 7            |             | Math in the Stock Market                         | BR15        |
| Pomerantz                       | Sarah             | 7            |             | Math in Judaism                                  | BR13        |
| Varma                           | Viren             | 7            |             | Math in Baseball                                 | BR14        |
| <b>Clarke High School</b>       |                   |              |             |  |             |
| Ramlall                         | Justin            | 10           |             | The Fourth Dimension                             | BRW103      |
| Sayed                           | Pantho            | 10           |             | Mathematics in Astronomy                         | BRW201      |
| Shah                            | Aashini           | 10           |             | Coloring in Mathematics                          | BRW204      |
| Suri                            | Pavit             | 10           |             | Heron's Formula                                  | D16         |
| <b>Cold Spring Harbor HS</b>    |                   |              |             |  |             |
| Davis                           | Stephen           | 9            |             | Sums of Sequences                                | R109        |
| <b>Commack High School</b>      |                   |              |             |  |             |
| Levine                          | Delina            | 9            |             | The Mathematics of AM Radio                      | R212        |
| Muthukumar                      | Pragati           | 9            |             | The Mathematics of GPS                           | R101        |
| Delmonaco                       | Michael           | 10           |             | Infinite Sums and Riemann Hypothesis             | D16         |
| Serritella                      | Mia               | 10           |             | Analyzing Minerals through internal Geometry and | BRW102      |
| <b>Commack Middle School</b>    |                   |              |             |  |             |
| Passaro                         | Ryan              | 7            |             | "You Gotta Know When to Fold'em in Holdem"       | BR20        |
| Walsh                           | Jordan            | 7            |             | "Passing Go": Mathematics of Monopoly            | BR13        |
| Pirtle                          | Max               | 8            |             | Kakeya's Needle Problem                          | BR203       |
| Ramotar                         | Alexandra         | 8            |             | The Phi Torus Array                              | BR205       |
| Robinson                        | Paige             | 8            |             | The Mathematics of Fraud Examination             | BR103       |
| Wang                            | Andrew            | 8            |             | Mathematics of Sound Waves                       | BR200       |
| <b>Copiague Middle School</b>   |                   |              |             |  |             |
| Hernandez                       | Nicole            | 8            |             | Infinity in Math                                 | BR100       |
| <b>Doshi STEM- Nassau Boces</b> |                   |              |             |  |             |
| Cecere                          | Jack              | 9            |             | The Math Behind a Rubiks Cube                    | R106        |
| Chow                            | Nelson            | 9            |             | Math Involved in Swimming                        | R111        |
| Lewkowicz                       | Michal            | 9            |             | Gravity  | R213        |
| Chowdhury                       | Nabil             | 10           |             | Exploratoin of the Frog Puzzle and Variances     | BRW202      |
| Kaur                            | Manpreet          | 10           |             | The Mathematics Behind Ice Skating               | BRW101      |
| Malhotra                        | Sonali            | 10           |             | The Mathematics in Structural Design             | D15         |
| <b>East Meadow High School</b>  |                   |              |             |  |             |
| Arora                           | Anusha            | 9            |             | Algebraic Topology                               | R109        |
| Lopez                           | Laura             | 9            |             | The Mathematics in Clocks                        | R102        |
| Ali                             | Mehrin            | 10           |             | Taylor Series                                    | D17         |
| Diamond                         | Jordan            | 11           |             | Related Rates                                    | A109        |
| Floody                          | Erin              | 11           |             | Mathematics of Bouncing Balls                    | BA201       |
| Sugrim                          | Kirkland          | 11           |             | Mathematics of Origami                           | GAL14       |
| Uppal                           | Nikita            | 11           |             | Computational Alogorithms                        | GAL242      |
| Alam                            | Sarah             | 12           |             | Optimization                                     | HE100       |
| Nathani                         | Zainab            | 12           |             | The Mathematics of Phylogeny                     | HE101       |

| Last Name                           | First Name  | Grade | Team   | Topic   | Room   |
|-------------------------------------|-------------|-------|--------|---|--------|
| Rahman                              | Rumana      | 12    |        | Definite Integrals                                      | S107   |
| <b>East Moriches School</b>         |             |       |        |   |        |
| Giacchetto                          | Michael     | 7     |        | Sports Statistics                                       | BR15   |
| Hawkesworth                         | Jade        | 7     | Team B | Seven Bridges of Konigsberg                             | SC141  |
| Paulson                             | Jane        | 7     | Team B | Seven Bridges of Konigsberg                             | SC141  |
| Tufano                              | Hanna       | 8     |        | Fractals  | BR203  |
| Agme                                | Jasmine     | 8     | Team A | Chaos Theory  | SC142  |
| Croce                               | Jacob       | 8     | Team A | Chaos Theory  | SC142  |
| Lidonnici                           | Thomas      | 8     | Team A | Chaos Theory  | SC142  |
| <b>East Northport Middle School</b> |             |       |        |   |        |
| Boyle                               | Matthew     | 7     |        | Math and Music  | BR14   |
| McDonagh                            | Thomas      | 7     |        | Matrix  | BR25   |
| Stratton                            | Derek       | 7     |        | Air and Water Pressure                                  | BR19   |
| Cacic                               | Luke        | 8     |        | Deriving the Trigonometric Pythagorean Identities       | BR205  |
| Krantz                              | Theodore    | 8     |        | Math in Music   | BR206  |
| Patel                               | Harsh       | 8     |        | Probability   | BR106  |
| Widmaier                            | Kirsten     | 8     |        | Egyptian Math   | BR216  |
| <b>Elmont Memorial HS</b>           |             |       |        |   |        |
| Browne                              | Kyla        | 8     |        | Imaginary and Complex Numbers                           | BR206  |
| Munn                                | Brianna     | 9     |        | Series and Sequences                                    | R106   |
| Browne                              | Dominique   | 10    |        | Hypercomplex Numbers                                    | BRW203 |
| Phillip                             | Joshua      | 11    |        | Math and the Stock Market                               | L211   |
| <b>Friends Academy</b>              |             |       |        |   |        |
| Brown                               | Ashley      | 10    |        | Fibonacci sequence, number spiral, and the golden ratio | BRW202 |
| Miller                              | Jennie      | 10    |        | Knot Theory and its Applications                        | D11    |
| Silverstein                         | Paige       | 10    |        | Chaos Theory  | D17    |
| <b>Frost Middle School</b>          |             |       |        |   |        |
| Rosati                              | Matthew     | 8     |        | Magic Squares   | BR106  |
| <b>Garden City High School</b>      |             |       |        |   |        |
| McGannon                            | Christian   | 9     |        | Sabermetrics  | R108   |
| Woo                                 | Seunghyun   | 11    |        | Elliot Wave Theory                                      | GAL14  |
| Biscone                             | Tianna      | 12    |        | Poverty and Income explained by Calculus                | S108   |
| Flouskakis                          | Yianni      | 12    |        | Bioinformation  | S109   |
| Liu                                 | Richard     | 12    |        | Complex Numbers   | S201   |
| <b>Great Neck North HS</b>          |             |       |        |   |        |
| Lu                                  | Christopher | 9     |        | The truth behind Galileo's infinite sets                | R206   |
| Rothbaum                            | Joshua      | 9     |        | Data on the diamond: sabermetric analysis in baseball   | R201   |
| Chen                                | Luhan       | 10    |        | Taylor Series Expansion                                 | BRW204 |
| <b>HAFTR</b>                        |             |       |        |   |        |
| Sacks                               | Rachel      | 11    |        | The Enigmatic Qualities of Prime Numbers                | BA102  |
| Adlerstein                          | Isaac       | 12    |        | Infinity and Beyond                                     | S209   |
| Fleschner                           | David       | 12    |        | A Hierarchy of Infinite Sets                            | S302   |
| Herskowitz                          | Jeremy      | 12    |        | Triangular Numbers                                      | S308   |
| Hoffman                             | Jacob       | 12    |        | The Cardinality of Numbers                              | W100A  |

| Last Name                        | First Name | Grade | Team | Topic   | Room   |
|----------------------------------|------------|-------|------|---|--------|
| Kastner                          | Jonathan   | 12    |      | The Erratic Patterns of Prime Numbers                   | W100B  |
| Lish                             | Justin     | 12    |      | A Comparison of Plane and Spherical Trigonometry        | W204   |
| Nathan                           | Brian      | 12    |      | Prime Patterns  | HE100  |
| Winkler                          | Jack       | 12    |      | Chaos Theory  | HE101  |
| <b>Half Hollow Hills HS East</b> |            |       |      |   |        |
| Blatt                            | Ashley     | 9     |      | Polynomial Functions                                    | R109   |
| Bordwin                          | Isabella   | 9     |      | Math in Music   | R212   |
| Clark                            | Sophia     | 9     |      | Optical Illusions                                       | R111   |
| Krishman                         | Shreya     | 9     |      | Math behind search engines                              | R102   |
| Weltmann                         | Matthew    | 9     |      | Catalan Numbers   | R108   |
| Wild                             | Leo        | 9     |      | Taxicab Geometry  | R201   |
| Winakor                          | Jessica    | 9     |      | Probability in Genetics                                 | R213   |
| Braun                            | Alexi      | 10    |      | Optical Illusions                                       | BRW202 |
| Fogel                            | Lauren     | 10    |      | Matrices  | D11    |
| Goldberg                         | Benjamin   | 10    |      | Matrices  | D15    |
| Luntz                            | Danielle   | 10    |      | Fibonacci   | BRW106 |
| Patil                            | Aditi      | 10    |      | Differential Equations                                  | D16    |
| Blatt                            | Jesse      | 11    |      | Related Rates   | GAL13  |
| Sabhnani                         | Viren      | 11    |      | Linear Algebra and its Applications                     | GAL14  |
| Stein                            | Adam       | 11    |      | Area under the curve                                    | GAL18  |
| Taj                              | Matthew    | 11    |      | Integrals   | L203   |
| Tramposch                        | Nicholas   | 11    |      | Integrals   | A212   |
| Davolina                         | Joseph     | 12    |      | Artificial Neural Network                               | S107   |
| <b>Half Hollow Hills HS West</b> |            |       |      |   |        |
| Tucker                           | Lauren     | 10    |      | Calculating the numerical values for letters, word, and | D17    |
| Maheshwari                       | Anjali     | 11    |      | Integration   | A109   |
| Ogata                            | Tatum      | 11    |      | Game Theory   | BA102  |
| <b>Hauppauge Middle School</b>   |            |       |      |   |        |
| Chilakamarthy                    | Ritvik     | 8     |      | Egyptian Fractions                                      | BR208  |
| Fortmeyer                        | Caroline   | 8     |      | The Mathematics of Barcodes                             | BR200  |
| Maroney                          | Matthew    | 8     |      | Linear Regression                                       | BR216  |
| <b>Herricks High School</b>      |            |       |      |   |        |
| Kim                              | Christina  | 9     |      | Pythagoras  | R212   |
| Lau                              | Joanna     | 9     |      | Fractals and Cancer                                     | R213   |
| Rawal                            | Soham      | 9     |      | Inferential Statistics in Medicine                      | R101   |
| Rocco                            | Andrew     | 9     |      | Trajectory of Projectiles                               | R106   |
| Soni                             | Hita       | 9     |      | Conic Sections in Outer Space                           | R201   |
| Tsai                             | Andrew     | 9     |      | Divine Proportion/Golden Ratio                          | R111   |
| Hsu                              | Janet      | 10    |      | Computer Graphics                                       | BRW106 |
| Sawhney                          | Aman       | 10    |      | LaPlace Transform Application                           | BRW102 |
| Singla                           | Anisha     | 10    |      | The Golden Ratio and the Fibonacci Sequence             | BRW104 |
| Wu                               | Angela     | 10    |      | Spherical Geometry                                      | D15    |
| Ahmed                            | Nibras     | 11    |      | Chaos Theory  | A212   |
| Koe                              | Nora       | 11    |      | Data Science  | GAL242 |



| Last Name | First Name | Grade | Team | Topic               | Room |
|-----------|------------|-------|------|---------------------|------|
| Pathak    | Naeha      | 11    |      | Cryptography        | L203 |
| Abbi      | Sahil      | 12    |      | Isomorphism         | S108 |
| Chen-Ran  | Emily      | 12    |      | Encription          | S109 |
| Patel     | Bhakti K.  | 12    |      | Optimization        | S201 |
| Patel     | Nisarg     | 12    |      | Zipf's Law          | S209 |
| Zhao      | Brian      | 12    |      | The Packing Problem | S302 |

#### Herricks Middle School

|                |         |   |  |                           |       |
|----------------|---------|---|--|---------------------------|-------|
| Chou           | Alison  | 7 |  | Game Theory               | BR13  |
| Kim            | Andrew  | 7 |  | Logarithms                | BR15  |
| Koe            | Justin  | 7 |  | Pascal's Triangle         | BR19  |
| Krishnamoorthy | Preethi | 7 |  | Matrices and Determinants | BR18  |
| Lakshmanan     | Haritha | 7 |  | Fibonacci Numbers         | BR16  |
| Leung          | Samuel  | 7 |  | The Law of Cosines        | BR25  |
| Pinzon         | Kyle    | 7 |  | Matrices and Determinants | BR14  |
| Tan            | Chiara  | 7 |  | Matrices                  | BR20  |
| Wei            | Emily   | 7 |  | Parabolas                 | BR26  |
| Chen           | Derek   | 8 |  | Topology                  | BR105 |
| Gupta          | Rohan   | 8 |  | Differential Calculus     | BR205 |
| Hsu            | Carrie  | 8 |  | Cubic Functions           | BR216 |
| Joseph         | Angela  | 8 |  | Pascal's Triangle         | BR106 |
| Patel          | Shreya  | 8 |  | Conic Sections            | BR100 |
| Soni           | Harsh   | 8 |  | Limits                    | BR112 |
| Thyagaray      | Joanna  | 8 |  | The Law of Cosines        | BR200 |
| Tucker         | Emily   | 8 |  | Matrices and Determinants | BR208 |
| Won            | Rachel  | 8 |  | Tetrahedron               | BR111 |

#### Hicksville Schools

|          |           |    |  |  |        |
|----------|-----------|----|--|--|--------|
| Singh    | Navptreet | 7  |  | p  | BR20   |
| Raval    | Priyansh  | 10 |  | Mass Point Geometry                        | BRW103 |
| Braich   | Jasdeep   | 11 |  | Traveling Salesman Problem                 | BA102  |
| Jiang    | Johnson   | 11 |  | Reimannian Geometry                        | GAL242 |
| Mathew   | Shana     | 11 |  | The Monty Hall Problem                     | A209   |
| Srinivas | Sailesh   | 11 |  | The Chinese Remainder Theorem              | BA201  |
| Mulani   | Nitya     | 12 |  | Kelly Criterion                            | S308   |
| Swiss    | William   | 12 |  | Category Theory and Functional Programming | W100A  |

#### Holy Trinity High School

|           |          |    |  |                         |        |
|-----------|----------|----|--|-------------------------|--------|
| Barry     | John     | 9  |  | Pascal's Triangle       | R110   |
| Harten    | Patrick  | 9  |  | Math and NASCAR         | R13    |
| Jiang     | Bing lun | 9  |  | Math and Music          | R102   |
| Campos    | Andrea   | 10 |  | The Four Color Theorem  | BRW202 |
| DiGiorgio | Ambar    | 10 |  | Math and Astronomy      | BRW102 |
| DiGrazia  | Julia    | 10 |  | Mathematics and Bubbles | BRW204 |
| Farino    | Louis    | 10 |  | The Golden Ratio        | D14    |
| Jacob     | Amy      | 10 |  | Mathematics of Spirals  | BRW106 |
| Muller    | Hannah   | 10 |  | Fractals                | D20    |

| Last Name                      | First Name | Grade | Team | Topic  | Room   |
|--------------------------------|------------|-------|------|--|--------|
| Muller                         | Hannah     | 10    |      | Fractals   | D20    |
| Nguyen                         | Carol      | 10    |      | Mathematics in Monopoly                                  | BRW103 |
| Parmar                         | Ashwinder  | 10    |      | Mathematics of Juggling                                  | BRW101 |
| <b>Huntington High School</b>  |            |       |      |  |        |
| Nykolyn                        | Miranda    | 11    |      | The Mathematics Behind Navigational Systems              | GAL17  |
| Yeh                            | Steve      | 11    |      | Alternative Methodology of Numerical Integration         | GAL16  |
| <b>ICPS</b>                    |            |       |      |  |        |
| James                          | Justin     | 10    |      | Prime Triplets and Twin Primes                           | BRW201 |
| Celic                          | Dan        | 11    |      | Proving Higher Dimension Figures Using Trig              | GAL17  |
| Clopper                        | Alex       | 11    |      | Squares, Cubes, Triangle Numbers                         | L203   |
| Postiglione                    | Thomas     | 11    |      | Consecutive Fibonacci Number in Quadratics               | A109   |
| <b>Jericho High School</b>     |            |       |      |  |        |
| Pahlavan                       | Airanna    | 9     |      | Matrices and Applications                                | R108   |
| Xu                             | David      | 9     |      | Ant Colony Optimization                                  | R13    |
| Basavaraju                     | Rohan      | 10    |      | Gamma Function   | D11    |
| Cen                            | Melanie    | 10    |      | Chaos Theory   | D15    |
| Chen                           | Caroline   | 10    |      | Medication Adherence and Preventable Expenses: Case      | BRW101 |
| Chowdhary                      | Ayana      | 10    |      | Matrices and Graphs                                      | D14    |
| Gan                            | Emma       | 10    |      | Molecular Geometry                                       | BRW102 |
| Venkatesh                      | Harsha     | 10    |      | Simpson's Paradox  | D20    |
| Wong                           | Benjamin   | 10    |      | Using Binary Star Systems to Determine Stellar Masses    | BRW103 |
| Wong                           | Kristal    | 10    |      | ISBN Codes and Credit Card Numbers                       | D16    |
| Xu                             | Alex       | 10    |      | Conway's Game of Life                                    | D17    |
| Agarwal                        | Shimona    | 11    |      | Optimization   | A212   |
| Ames                           | Justin     | 11    |      | Cyclic Primes  | BA201  |
| Lee                            | Nate       | 11    |      | Cracking the German Enigma                               | L201   |
| Li                             | Sandra     | 11    |      | Statistical Trends in Swimming Records                   | BA102  |
| Munayirji                      | Brittney   | 11    |      | Development of Logarithms                                | GAL13  |
| Pahlavan                       | Adam       | 11    |      | Anovel Method for Wedding Virtual Electrodes             | GAL17  |
| Ritter                         | Brett      | 11    |      | Counting Cards and Expected Returns                      |        |
| Sridhar                        | Aarthi     | 11    |      | Volume of Spheres  | GAL16  |
| <b>Kennedy High School POB</b> |            |       |      |  |        |
| Shine                          | Audrey     | 9     |      | Zipf's Law   | R102   |
| Aber                           | Rachel     | 11    |      | Gnomonic Projection                                      | A209   |
| Ash                            | Alec       | 11    |      | Force Field Function for Molecules with Modified Bases   | BA102  |
| Blum                           | Talia      | 11    |      | Continued Fractions and Diophantine Equations and Pell's | A109   |
| Cohen                          | Julia      | 11    |      | Barth Sextic   | GAL18  |
| Danziger                       | Philip     | 11    |      | Boolean Algebra and Logic                                | L201   |
| Getzler                        | Jason      | 11    |      | Lagrange's Theorem                                       | GAL16  |
| Kuster                         | Max        | 11    |      | Spherical Spirals  | GAL242 |
| Shah                           | Mili       | 11    |      | Inverse Square Law                                       | GAL17  |
| Xenakis                        | Georgia    | 11    |      | Simple Continued Fractions                               | GAL13  |
| Yom                            | Jina       | 11    |      | Markov Chains  | A212   |

| Last Name                       | First Name | Grade | Team   | Topic  | Room   |
|---------------------------------|------------|-------|--------|--|--------|
| <b>Lawrence High School</b>     |            |       |        |  |        |
| Baez                            | Heysil     | 9     |        | Projectiles  | R109   |
| Bukhari                         | Syed       | 9     |        | Limits   | R201   |
| Diaz                            | Stefany    | 12    |        | Linear Programming                                       | W100B  |
| Nijjer                          | Manmeet    | 12    |        | Reflective Primes  | W204   |
| <b>Lawrence Middle School</b>   |            |       |        |  |        |
| Mundell                         | Nathan     | 8     | Team A | The ZipF Mystery   | SC141  |
| Scropo                          | Noah       | 8     | Team A | The ZipF Mystery   | SC141  |
| Herrera                         | Cristina   | 8     | Team B | Chaos Theory   | SC143  |
| Sandhu                          | Bhawan     | 8     | Team B | Chaos Theory   | SC143  |
| Cohen                           | Lia        | 8     | Team C | Cancer and Genetics                                      | SC142  |
| Flores                          | Maria      | 8     | Team C | Cancer and Genetics                                      | SC142  |
| <b>Long Beach Middle School</b> |            |       |        |  |        |
| Arengo                          | Maya       | 7     |        | The Golden Ratio   | BR13   |
| <b>MacArthur High School</b>    |            |       |        |  |        |
| Chowdhury                       | Saajid     | 9     |        | Collatz Conjecture                                       | R101   |
| Portello                        | Nicholas   | 9     |        | The History of Controversies of the Pythagorean Theorem  | R106   |
| Butcher                         | Casey      | 11    |        | Economic Viability of Sewer Systems                      | GAL18  |
| <b>Manhasset High School</b>    |            |       |        |  |        |
| Farrell                         | Michael    | 9     |        | The Postage Stamp Problem                                | R109   |
| Kiley                           | Emily      | 10    |        | Iteration and Chaotic Dynamics                           | BRW204 |
| Locurto                         | Marissa    | 10    |        | Examining Applied Rational Functions                     | D15    |
| Pidedjian                       | Adam       | 10    |        | Punting Probabilities                                    | BRW203 |
| Bakshandeh                      | Michael    | 11    |        | The Physics Behind a Golf Swing                          | BA201  |
| Kim                             | Benjamin   | 11    |        | Modeling   | GAL18  |
| Van Roy                         | Parker     | 11    |        | Sustainable Energy Production by Black Holes             | L201   |
| Alcamo                          | Dominique  | 12    |        | Markov Chains and Applications of Matrix Methods         | HE100  |
| Alonso                          | Matthew    | 12    |        | Basic Financial Mathematics                              | HE101  |
| Barrett                         | Connor     | 12    |        | Price Elasticity of Demand                               | S107   |
| Catalano                        | Caprice    | 12    |        | Mathematics of Water Purification                        | S108   |
| Catlett                         | Grace      | 12    |        | Spread of Infectious Disease                             | S201   |
| Chaudhry                        | Ahmad      | 12    |        | Polling Pitfalls   | S109   |
| Chee                            | Nicole     | 12    |        | Traffic Flow Problem                                     | S209   |
| DiPreta                         | Steven     | 12    |        | Mathematics of Refinancing                               | S302   |
| Gold                            | Thomas     | 12    |        | Vector Applications and Manipulations                    | S308   |
| Henry                           | Julia      | 12    |        | The Calculus of Rocket Science                           | W100A  |
| Lii                             | Randy      | 12    |        | The Big Texas Lottery                                    | W100B  |
| Lu                              | Rachel     | 12    |        | The Great Lakes Problem                                  | W204   |
| Morrissey                       | Bryan      | 12    |        | The Math and Physics of Traveling to the Moon            | HE100  |
| Petras                          | Elizabeth  | 12    |        | The Mathematics of the Human Cough                       | HE101  |
| Petras                          | Timothy    | 12    |        | Probability and Patterns                                 | S107   |
| Sanders                         | Alyssa     | 12    |        | Glottochronology: Language Development in the Context of | S108   |
| Steck                           | Alexandra  | 12    |        | The Math of Magic Squares                                | S109   |

| Last Name                         | First Name | Grade | Team | Topic  | Room   |
|-----------------------------------|------------|-------|------|--|--------|
| Tomaselli                         | Vincent    | 12    |      | Gambling Probabilities and Odds              | S201   |
| Xenophontos                       | Paraskevi  | 12    |      | Applications of Interest                     | S209   |
| <b>North Shore Hebrew Academy</b> |            |       |      |  |        |
| Schneck                           | Eden       | 9     |      | Angle of Incidence and Its Effect on Seasons | R206   |
| Gilman                            | Benjamin   | 10    |      | Gyroscopes                                   | BRW101 |
| <b>North Shore High School</b>    |            |       |      |  |        |
| Leventhal                         | Hanah      | 9     |      | Rectangle-Square Paradox                     | R110   |
| Ramirez                           | Christina  | 9     |      | Area Irregular Figures                       | R206   |
| Bello                             | Hally      | 10    |      | Perfect Triangles                            | BRW202 |
| Berlin                            | Jacob      | 10    |      | Arbelos Properties                           | D14    |
| Bischoff                          | Frederic   | 10    |      | Polar Coordinates                            | D17    |
| Glennon                           | Isabelle   | 10    |      | Five-Con Triangles                           | BRW103 |
| Kearney                           | Meagan     | 10    |      | Consecutive Addends                          | D20    |
| Keenan                            | Riley      | 10    |      | Dividing a Line Segment                      | BRW104 |
| Reilly                            | Kinsale    | 10    |      | Circular Inversions                          | BRW201 |
| Roth                              | Bryce      | 10    |      | Hypotenuse Restrictions                      | BRW203 |
| Ruisi                             | Michael    | 10    |      | Escribed Circles to Triangles                | D11    |
| Santucci                          | Lauren     | 10    |      | Circle Partitioning                          | D16    |
| Sharkey                           | Robert     | 10    |      | Conics and Pythagorean Triples               | BRW101 |
| DeMartini                         | Charlotte  | 11    |      | Bramagupta Quadrilaterals                    | L211   |
| Leventhal                         | Sarah      | 11    |      | Tangent Circles in Triangles                 | GAL18  |
| Lucas                             | Caroline   | 11    |      | Irrational Constructions                     | GAL13  |
| Rieger                            | Kyra       | 11    |      | Heron's Formula                              | GAL14  |
| Vohra                             | Rajan      | 11    |      | Inscribed Circles in Triangles               | A209   |
| Zapken                            | Matthew    | 11    |      | DeMoivre's Theorem                           | BA201  |
| Abbondondolo                      | Sara       | 12    |      | Curious Derivative Patterns                  | S302   |
| Bazan                             | Stephanie  | 12    |      | Solving Quadratics Using Area                | S308   |
| Casatuta                          | Cathryn    | 12    |      | The Von Staudt Theorem                       | W100A  |
| Farb                              | Gabrielle  | 12    |      | Tangent Lines to Cubics                      | W100B  |
| Fossett                           | Ayanna     | 12    |      | Geometric Trisection                         | W204   |
| Ganasoulis                        | Katerina   | 12    |      | Exploring Inequalities                       | HE100  |
| Lacomba                           | Alexander  | 12    |      | Circle Area Dissection                       | HE101  |
| Nelson                            | Cecilia    | 12    |      | Dividable Triangles                          | S107   |
| Otis                              | Pam        | 12    |      | Trig Sum and Difference                      | S108   |
| Pelts                             | Talia      | 12    |      | Forcing Congruence                           | S109   |
| Purcell                           | Miranda    | 12    |      | Triangle Constrictions                       | S201   |
| Reilly                            | Julia      | 12    |      | Minimizing Cylindrical Distance              | S209   |
| Vizza                             | Diana      | 12    |      | Optical & Eccentric Conics                   | S308   |
| Zelenetz                          | Stephanie  | 12    |      | Regions That Cevians Create                  | W100A  |
| <b>North Shore Middle School</b>  |            |       |      |  |        |
| Blumenthal                        | Sophie     | 7     |      | Magic Squares                                | BR15   |
| Caldwell                          | Dean       | 7     |      | Magic Squares                                | BR26   |
| Drivas                            | Matt       | 7     |      | Pascals Triangle                             | BR16   |
| Efstathiadis                      | Christina  | 7     |      | Zeno's Paradox                               | BR18   |

| Last Name  | First Name | Grade | Team | Topic             | Room  |
|------------|------------|-------|------|-------------------|-------|
| Hagen      | Lauren     | 7     |      | Codes and Ciphers | BR16  |
| Lenney     | Scott      | 7     |      | Fractals          | BR18  |
| Mandell    | Aiden      | 7     |      | Codes and Ciphers | BR19  |
| Martin     | Lucia      | 7     |      | Codes and Ciphers | BR20  |
| Reynolds   | Patrick    | 7     |      | Fractals          | BR14  |
| Rosencrans | Sam        | 7     |      | Illusions         | BR13  |
| Rosencrans | Sophie     | 7     |      | Codes and Ciphers | BR25  |
| Weber      | Kelly      | 7     |      | Zeno's Paradox    | BR25  |
| Gillman    | Harrison   | 8     |      | Conic Sections    | BR111 |
| Hunt       | Katherine  | 8     |      | Math in Aviation  | BR200 |
| McCreery   | Kyra       | 8     |      | Euler's Number    | BR203 |
| Purcell    | Henry      | 8     |      | Fractals          | BR208 |
| Reilly     | Esme       | 8     |      | Topology          | BR103 |
| Thoet      | Carolyn    | 8     |      | Complex Numbers   | BR216 |

### Northport High School

|            |          |    |  |                                      |        |
|------------|----------|----|--|--------------------------------------|--------|
| Doyle      | William  | 9  |  | Derivatives of Differential Calculus | R206   |
| Driesen    | Samuel   | 9  |  | Limits                               | R13    |
| Ewanyk     | Rachel   | 9  |  | Mathematical Magic                   | R106   |
| Krohn      | Daniel   | 9  |  | Polar Coordinates                    | R111   |
| Lanzilotta | Mario    | 9  |  | Law of Sines and Cosines             | R201   |
| Macolino   | Marisa   | 9  |  | Logarithms and Exponents             | R110   |
| Zieran     | John     | 9  |  | Derivatives                          | R101   |
| Gozelski   | Sam      | 10 |  | Momentum and Collisions              | BRW101 |
| Holfester  | Nicholas | 10 |  | Derivatives and Velocity             | BRW104 |
| Kim        | Daniel   | 10 |  | Cryptography                         | BRW201 |
| MacDougall | Ian      | 10 |  | Codes and Ciphers                    | D15    |
| Morris     | Aimee    | 10 |  | The Math of Rainbows                 | BRW203 |
| Muzyka     | Stephen  | 10 |  | Game Theory                          | BRW103 |
| Petrucci   | Joseph   | 10 |  | Geometric Problems of Antiquity      | D20    |
| Citrin     | Shannon  | 11 |  | Calculus in Ice Cream                | L201   |
| Donohue    | James    | 11 |  | Mathematics in Track and Field       | A209   |
| Laisney    | Cybele   | 11 |  | Investigation of Soccer Free-Kicks   | A109   |
| Weigand    | Shawn    | 11 |  | Math in Track and Field              | BA201  |

### Northport Middle School

|                  |          |   |  |   |       |
|------------------|----------|---|--|---|-------|
| Burk             | Camden   | 7 |  | Mesozoic Math- Math and Dinosaurs                       | BR20  |
| Cavanaugh        | Justin   | 7 |  | Pressure  | BR13  |
| Connor           | James    | 7 |  | Transformations and Geometry in Video Games             | BR15  |
| Crafa            | Griffin  | 7 |  | Imaginary and Complex Numbers                           | BR16  |
| Guiliano         | Elias    | 7 |  | Math in Music: Equal Temperament and Pythagorean Tuning | BR25  |
| Jusdon-Teranishi | Keito    | 7 |  | Graph Theory  | BR14  |
| Rasizzi          | Frank    | 7 |  | The Golden Ratio  | BR26  |
| Schuvart         | McKenzie | 7 |  | Imaginary Numbers                                       | BR18  |
| Borovikova       | Sophia   | 8 |  | Conic Sections  | BR205 |
| Guerrero         | Marcos   | 8 |  | Binary and Hexadecimal Numbers                          | BR103 |

| Last Name                      | First Name | Grade | Team   | Topic   | Room   |
|--------------------------------|------------|-------|--------|---|--------|
| Mitard                         | Kyle       | 8     |        | Logarithms  | BR111  |
| Penrose                        | Kevin      | 8     |        | Cryptography  | BR206  |
| Stepanek                       | Chloe      | 8     |        | Pi  | BR105  |
| <b>Oceanside High School</b>   |            |       |        |   |        |
| Utrecht                        | Alex       | 9     |        | Four Color Theorem  | R110   |
| Dauber                         | Jack       | 10    |        | Game Theory and World War                                   | BRW204 |
| Dimitrakas                     | Nickolas   | 10    |        | Global Warming Effects                                      | BRW104 |
| Pagona                         | Nina       | 10    |        | Palindromic Cycles  | BRW203 |
| Wright                         | Jacqueline | 10    |        | Logistic Growth in Ebola Outbreak                           | D14    |
| Pocress                        | Michael    | 11    |        | Modeling Disease Progression with Differential Equations    | A209   |
| Wollweber                      | Thomas     | 11    |        | Analysis of Deer Population in America                      | L211   |
| McMahon                        | Paige      | 12    |        | Analysis of Concussions using Chi-Square Distributions      | W100B  |
| Phillips                       | Cassidy    | 12    |        | Optimizing Viewing Angles                                   | W204   |
| Zagorski                       | Jason      | 12    |        | Gabriel's Horn Extension                                    | HE100  |
| Zucker                         | Risa       | 12    |        | Optimal Arc of the 3 Point Shot                             | HE101  |
| <b>Oceanside Middle School</b> |            |       |        |   |        |
| Henn                           | Catherine  | 8     | Team I | The Tower of Hanoi  | SC141  |
| Palmieri                       | Christina  | 8     | Team I | The Tower of Hanoi  | SC141  |
| Piccinano                      | Jenna      | 8     | Team J | The Pythagorean Theorem and Musical Applications            | SC143  |
| Rosano                         | Jessie     | 8     | Team J | The Pythagorean Theorem and Musical Applications            | SC143  |
| <b>Portledge School</b>        |            |       |        |   |        |
| Sun                            | Jerry      | 10    |        | Kepler's Second Law: Proof by Calculus                      | BRW106 |
| <b>Roslyn High School</b>      |            |       |        |   |        |
| Ginsberg                       | Hannah     | 9     |        | Inscribed circles of different shapes                       | R206   |
| Khazzam                        | Alexa      | 9     |        | Graph theory  | R101   |
| Leventhal                      | Emily      | 9     |        | Math Behind the perfect song                                | R106   |
| Mintz                          | Emily      | 9     |        | Graph theory: A mathematical approach to modeling real      | R108   |
| Schiavo                        | Justin     | 9     |        | Velocity needed to get a rocket from the launchpad to orbit | R101   |
| Schneider                      | Gemma      | 9     |        | Deriving formulas to determine the number of squares,       | R206   |
| Tom                            | Stephanie  | 10    |        | Kobon Triangle Problem                                      | BRW102 |
| Kong                           | Mark       | 11    |        | Conic sections and Time                                     | GAL13  |
| <b>Roslyn Middle School</b>    |            |       |        |   |        |
| Mayourian                      | Jacob      | 7     |        | Math in Barcodes  | BR16   |
| Russ                           | Lindsey    | 7     |        | Prisoner's Dilemma  | BR18   |
| Wachsman                       | Ethan      | 7     |        | Mathematics of projectile motion                            | BR19   |
| Antenberg                      | Andrew     | 8     |        | Randomization   | BR205  |
| Covey                          | Adam       | 8     |        | Platonic Solid  | BR216  |
| Friedman                       | Lianna     | 8     |        | Conic Sections  | BR105  |
| Hou                            | Ashley     | 8     |        | Perimeter of Triangles and Curved Edges                     | BR208  |
| Khazzam                        | Carly      | 8     |        | Fractals  | BR106  |
| Litvack                        | Jack       | 8     |        | Four color theorem  | BR200  |
| Rubin                          | Maddie     | 8     |        | Binary Number System  | BR203  |
| Rufai                          | Feyi       | 8     |        | Golden Ratio  | BR206  |
| Stein                          | jacob      | 8     |        | Hyperbolic )Paraboliid                                      | BR100  |

| Last Name | First Name | Grade | Team   | Topic   | Room  |
|-----------|------------|-------|--------|---|-------|
| Stoller   | Jake       | 8     |        | Conic Sections  | BR112 |
| Terbancea | Nicholas   | 8     |        | Ratios of Circumcenters and centriods                   | BR111 |
| Zhang     | Olivia     | 8     |        | Golden Ratio  | BR103 |
| Drenis    | Liana      | 8     | Team A | Barcoding / QR codes                                    | SC142 |
| Fried     | Justin     | 8     | Team A | Barcoding / QR codes                                    | SC142 |
| Futoran   | Daniella   | 8     | Team B | Logarithms  | SC141 |
| Perlman   | Zach       | 8     | Team B | Logarithms  | SC141 |
| Chong     | Truman     | 9     |        | Factors of Integers                                     | R13   |
| Flashner  | Joshua     | 9     |        | Packing tangents circles into a exterior tangent circle | R109  |
| Flyer     | Daniel     | 9     |        | Packing circles into regular polygons                   | R213  |
| Goldberg  | Andrew     | 9     |        | Ailles Rectangle and thye Golden Triangle               | R212  |
| Goodstadt | Brynn      | 9     |        | Area: Shoelace Method                                   | R213  |
| Kim       | Jeremy     | 9     |        | Number theory   | R110  |
| Kim       | Sarah      | 9     |        | Triangular numbers                                      | R13   |
| Koo       | Matthew    | 9     |        | Number Theory   | R102  |
| Miller    | Harris     | 9     |        | Packing sequences - number theory                       | R111  |
| Tom       | Catherine  | 9     |        | Number theory- paths in a mxn grid                      | R201  |
| Tsao      | Spencer    | 9     |        | Triangular arrays                                       | R108  |

#### Schreiber High School

|             |            |    |  |   |        |
|-------------|------------|----|--|---|--------|
| Romanski    | Lucas      | 9  |  | The Fundamentals at Special Relativity                      | R212   |
| Cai         | Iris       | 10 |  | Variations of the Pascal's Triangle                         | BRW202 |
| Calamari    | Nicole     | 10 |  | Expanding the Justification Criteria for Solar Panel ROI    | D11    |
| Finkelstein | Anna       | 10 |  | Studies on a Variation of the Koch Snowflake/Curve          | D17    |
| Gao         | Alexsandra | 10 |  | Analyzing factors that effect the Tkatchev                  | BRW102 |
| Johnson     | Shiraz     | 10 |  | Forces on Roller Coaster Cars                               | BRW104 |
| Kobayashi   | Ayato      | 10 |  | Analysis of the sneaker secondary (resale) market, creating | BRW203 |
| Oh          | Solbi      | 10 |  | 3D Koch Snowflake vs. Original Koch Snowflake               | D20    |
| Ruskin      | Julia      | 10 |  | Measuring the Impact of Vaccination Rates on Measles        | BRW106 |
| Shi         | Sherry     | 10 |  | Calculating and analyzing the CO2 emission as a result of   | BRW201 |
| D'Alonzo    | Samantha   | 11 |  | Testing the Effictiveness of the Friendship Paradox for     | A209   |
| Feldman     | Elias      | 11 |  | Identity Theft Demographics                                 | GAL16  |
| Goldman     | Sarah      | 11 |  | A Mathematical approach in comparing nutrtn facts label     | L211   |
| Hurt        | Jordan     | 11 |  | Predicting El Nino Using Lunar Cycles                       | A212   |
| Kogan       | Maria      | 11 |  | Analyzing the Effects of Iteration on Image Registrations   | BA102  |
| Konoff      | Robert     | 11 |  | Optimizing Solar Panels With Net Metering and Adjusting     | GAL13  |
| Langone     | Dylan      | 11 |  | On the Orbital Trajectories of Comparatively Low Mass       | GAL18  |
| Nam         | HyeonSeok  | 11 |  | Application of Pascal's Triangle on 3-Dimensional Network   | L203   |
| Taylor      | Brittany   | 11 |  | Statistic Comparison of Schreiber High School Standardized  | A109   |
| Gao         | Tiger      | 12 |  | Configuration of a Small-Scale CPV System                   | S107   |

#### Smithtown High School West

|           |         |    |  |              |        |
|-----------|---------|----|--|--------------|--------|
| Spreizer  | Steven  | 10 |  | Algorithms   | D14    |
| Kyranakis | Stephen | 11 |  | Power Series | GAL242 |

| Last Name                        | First Name  | Grade | Team   | Topic  | Room   |
|----------------------------------|-------------|-------|--------|--|--------|
| <b>South Woods Middle School</b> |             |       |        |  |        |
| Rasquinha                        | Giselle     | 7     |        | Mendel's Law   | BR14   |
| Louie                            | Kiersten    | 7     | Team A | Geometry by Folding Paper                                    | SC141  |
| Qian                             | Amanda      | 7     | Team A | Geometry by Folding Paper                                    | SC141  |
| Klimberg                         | Julia       | 8     |        | Fibonacci Sequence   | BR100  |
| Luo                              | Yan         | 8     |        | Pi   | BR111  |
| Alam                             | Jishaan     | 8     | Team C | Golden Ratio   | SC142  |
| Chen                             | Patrick     | 8     | Team C | Golden Ratio   | SC142  |
| Guo                              | Victoria    | 8     | Team E | Astronomy and Mathematics                                    | SC143  |
| Thomas                           | Merin       | 8     | Team E | Astronomy and Mathematics                                    | SC143  |
| Datta                            | Archisha    | 8     | Team F | Infinity   | SC142  |
| Sol                              | Yvette      | 8     | Team F | Infinity   | SC142  |
| <b>Stimson Middle School</b>     |             |       |        |  |        |
| Graff                            | Emma        | 8     |        | Japanese Abacus  | BR100  |
| Hong                             | Stephen     | 8     |        | Fibonacci Numbers  | BR112  |
| Ramsaran                         | Alyssa      | 8     |        | Baseball by the Numbers                                      | BR203  |
| <b>Syosset High School</b>       |             |       |        |  |        |
| Li                               | Kevin       | 7     |        | $a^2 + b^2 = c^2$ So Much More Than $c^2$                    | BR26   |
| Jang                             | Sophia      | 8     |        | Mathematics of Networks                                      | BR103  |
| Lam                              | Thomas      | 9     |        | Fourier Transformation                                       | R102   |
| Park                             | Aileen      | 9     |        | Proofs in Number Theory                                      | R108   |
| Abraham                          | Hannah      | 10    |        | Golden Ratios and its Application in Aesthetics              | BRW106 |
| Arora                            | Jahnavi     | 10    |        | Color Theorem  | BRW204 |
| Goldberg                         | Jillian     | 10    |        | Shortest Networks & Steiner Points                           | D14    |
| Israel                           | Daniel      | 10    |        | Quantum Key Distribution: Key Creation Encoded               | D20    |
| Johari                           | Neil        | 10    |        | Machine Learning   | D11    |
| Li                               | Wanlin      | 10    |        | Addition of Rational Points on Elliptic Curves               | BRW201 |
| Tang                             | Jacquelin   | 10    |        | Fractal Geometry   | D16    |
| Chen                             | Maximillian | 11    |        | Bayesian Approach to Consumer Credit Screening               | A212   |
| He                               | Andrea      | 11    |        | Mass Points  | GAL16  |
| Samantaray                       | Yash        | 11    |        | Roots of Unity   | GAL242 |
| Tang                             | Richard     | 11    |        | Coast Lines: A Fractal Conundrum                             | L211   |
| Wang                             | David       | 11    |        | Data Anonymization   | GAL14  |
| Grunberg                         | Jack        | 12    |        | Newton's Method  | S108   |
| Mehrotra                         | Arjun       | 12    |        | An Application of Cluster Analysis to Brain Connectivity     | S109   |
| Yurchenko                        | Ilya        | 12    |        | Applications of the 2-State Weather Model to Analysis of Big | S201   |
| <b>The Wheatley School</b>       |             |       |        |  |        |
| Ajmena                           | Rahul       | 8     |        | Projectile Motion  | BR100  |
| Jain                             | Sahil       | 8     |        | Fractals   | BR103  |
| Lee                              | Rachel      | 8     |        | A Brain of a Swimmer   | BR200  |
| Li                               | Karen       | 8     |        | Mathematics in Modern and Olden Cryptology                   | BR105  |
| Potrapeluk                       | Natalia     | 8     |        | The Math in Soccer   | BR111  |
| Ramos                            | Madison     | 8     |        | Mathematics in Computer Graphics                             | BR206  |
| Sparacio                         | Rebecca     | 8     |        | The Fibonacci Sequence                                       | BR106  |



| Last Name                        | First Name  | Grade | Team   | Topic  | Room   |
|----------------------------------|-------------|-------|--------|--|--------|
| Wong                             | Trenton     | 8     |        | Alternate Number Bases   | BR203  |
| Yagoda                           | Emily       | 8     |        | Arbitrage  | BR112  |
| Shukla                           | Manan       | 9     |        | The Ramsey Theorem   | R110   |
| Singh                            | Vedant      | 9     |        | The Nine Ball Problem  | R212   |
| Vega                             | Justin      | 10    |        | Non-Euclidean Geometry and its Applications                    | BRW104 |
| Gilbert                          | Jakob       | 11    |        | Equations for combining exponents                              | GAL17  |
| Lotzky                           | Gil         | 11    |        | Tetris: The infinite Case                                      | L201   |
| Nussbaum                         | Jax         | 11    |        | Finite Differences   | GAL14  |
| Aldad                            | Ron         | 12    |        | Applications of Topology                                       | S209   |
| Chen                             | Krista      | 12    |        | Extensions of the Birthday Problem                             | S302   |
| Jain                             | Arihat      | 12    |        | Maxwell's Equations  | S308   |
| Khanzada                         | Mohammad    | 12    |        | Mathematics of Horseracing and Betting                         | W100A  |
| Ng                               | Clarence    | 12    |        | Game of Life   | W100B  |
| Shen                             | Christopher | 12    |        | The Geometry of spacetime                                      | HE100  |
| Zuckerman                        | Andrew      | 12    |        | Semi-Automatic Segmentation and Automatic Classification       | W204   |
| <b>Thompson Middle School</b>    |             |       |        |  |        |
| Langman                          | Josh        | 7     |        | Magic Squares  | BR25   |
| Dhulia                           | Ronit       | 8     |        | Exploring the patterns within Pascal's Triangle and their uses | BR208  |
| <b>West Hollow Middle School</b> |             |       |        |  |        |
| Hoxha                            | Kevin       | 7     |        | Special Relativity   | BR26   |
| Kampta                           | Seth        | 7     |        | Math in Music  | BR19   |
| Shetty                           | Sohan       | 7     |        | Nim Games  | BR16   |
| Chen                             | Melissa     | 8     |        | Lissajous Curves   | BR216  |
| Gole                             | Megan       | 8     |        | Euler's Polyhedral Formula                                     | BR112  |
| Likos                            | Nicholas    | 8     |        | Matrices   | BR105  |
| Ye                               | Cassandra   | 8     |        | The Mathematics of Swimming                                    | BR206  |
| Abrams                           | Sarah       | 8     | Team A | Tesselations   | SC141  |
| Cook                             | Taylor      | 8     | Team A | Tesselations   | SC141  |
| Bigman                           | Rachel      | 8     | Team B | Magic Squares  | SC142  |
| Tedesco                          | Brianna     | 8     | Team B | Magic Squares  | SC142  |
| Gronich                          | Brooke      | 8     | Team C | Optical Illusions  | SC143  |
| Levine                           | Sloane      | 8     | Team C | Optical Illusions  | SC143  |
| <b>Woodland Middle School</b>    |             |       |        |  |        |
| Fong                             | Alyssa      | 8     |        | Math in Music: Through the Decades                             | BR105  |
| Froehlich                        | Vanessa     | 8     |        | Solids of Revolution   | BR106  |
| Pandey                           | Ikshu       | 8     |        | Pascal's Triangle  | BR112  |
| Johnson                          | Ashish      | 8     | Team A | Math and Architecture  | SC143  |
| Mun                              | Lucas       | 8     | Team A | Math and Architecture  | SC143  |
| <b>Woodmere Middle School</b>    |             |       |        |  |        |
| Cheng                            | Kelvin      | 7     |        | The Pythagorean Theorem  | BR15   |
| Vilensky                         | David       | 8     |        | Math 8 Economics   | BR205  |
| Kumar                            | Mithuna     | 9     |        | Components for a Mars Mission                                  | R111   |