NYC Department of Education
Joel I. Klein
Chancellor

FIGURES

Mathematics Newsletter | Department Of Mathematics and Science | January-February 2008

Upcoming Events

Core Curriculum Showcase
March 25 and 26

NCTM Annual Meeting
April 9 to 12 (Salt Lake City)

Department of Mathematics and Science
52 Chambers St. Room 208
New York, NY 10007
Tel: 212-374-0703
Fax: 212-374-5901
Visit our web page:
http://schools.nyc.gov/Academics/Mathematics/default.htm

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Puzzle of the Month

$$\begin{array}{r} \text{FORTY} \\ +\text{TEN} \\ +\text{TEN} \\ \hline \text{SIXTY} \end{array}$$

Replace the letters with single-digit numbers. Use only one number for each letter.

(Answer next month)

Stamp issued by the country of Liechtenstain showing the 39th Mersenne prime number (discovered in 2001).

Website of the Month

FUNBRAIN provides math learning activities for parents and teachers, including games (in Math Arcade) and a curriculum guide. Aimed mainly at grades K through 8, it actually has something for everyone. www.funbrain.com/

Moody's Mega Math (M^3) Challenge

The 2008 Moody's Mega Math Challenge (M^3 Challenge) will take place on the weekend of March 8-9. Scholarships ranging from $5,000 to $20,000 will be awarded to teams of high school juniors and seniors for excellence, creativity, and originality in quantitative and qualitative reasoning. Teams consisting of a coach and three to five students can be registered online at http://m3challenge.siam.org/register/. Deadline for registration is March 3. All information about the Challenge including registration information and online form, complete rules and guidelines, sample problems, and Challenge problems from the past two years with winning papers can be found at http://m3challenge.siam.org.

State Education Department: Calculator Use

The NYSED states: "The State Education Department requires the use of calculators for intermediate and high school level mathematics and science assessments. To the extent that calculators are a necessary part of the educational program, the school district must provide them. Under no circumstances should students be charged for a calculator or otherwise required to purchase one in order to participate in an educational program." The official notice may be found at the following site: www.emsc.nysed.gov/mgtserv/charging_for_calculators.shtml (See below)

Grade Eight Acceleration for Diploma Credits

The New York State Education Department has issued important clarifying information on the acceleration of grade eight students in mathematics. We quote (and emphasis is ours):

"In response to questions we have recently received from the field, we wanted to take an opportunity to provide important clarifying information on the Part 100 of the Regulations of the Commissioner of Education, which provide public school students in grade eight the opportunity to take high school courses in mathematics and in at least one of the following areas: English, social studies, languages other than English, art, music, career and technical education subjects or science courses.

This provision was put in place to provide opportunities for individual students rather than as a vehicle for accelerating entire cohorts of students into high school courses.

Superintendents or their designees shall determine whether an eighth grade student has demonstrated readiness to take high school courses. School districts are encouraged to develop and use a written set of criteria to determine each student's readiness for acceleration.

Grade eight students who are accelerated for diploma credit must have been provided instruction designed to facilitate their attainment of, by the end of grade seven, the State intermediate learning standards in each subject area in which they are accelerated.

Part 100 Regulations of the Commissioner of Education allow only grade eight students the opportunity to be accelerated into high school courses in the eighth grade and to receive credit for use in satisfying diploma requirements. **This provision does not extend to grade seven students.**

We hope this clarifying information is helpful. Grade eight acceleration for diploma credit may be found in subdivision 100.4(d) of the Part 100 Regulations of the Commissioner of Education. Section 100.4 may be accessed at http://www.emsc.nysed.gov/part100/pages/1004.html

Please contact Anne Schiano, Assistant Director, Curriculum, Instruction and Instructional Technology, at aschiano@mail.nysed.gov for additional information."

Calculators

Listed below are the courses in grades 7-12 that require access to calculators, and the specific calculator(s) that may be used on the assessment.

Course		4-Function Calculator		Scientific Calculator		Graphing Calculator
7th Grade Math	Required	no		yes		no
8th Grade Math	Required	no		yes		no
Math A	Required	no		yes	**OR**	yes
Math B	Required	no		no		yes
Integrated Algebra	Required	no		no		yes
AP Calculus	Required	no		no		yes
AP Statistics	Required	no		no		yes
PSAT	Required	yes	**OR**	yes	**OR**	yes

TechXplore Competition from NSTEP

Registration is now open for the ***Spring 2008 NSTEP TechXplore Competition***. TechXplore is a national science and technology competition that pairs middle and high school students with a mentor to collaborate on solutions to real-world problems. Last term we had 38 teams from our region participate, with mentors from technology fields around the country! The teams' web pages and PowerPoint projects will be entered with your teams' to compete for **$1,000** prizes. Previous participants may enter new teams. For more details, please contact Steve Peters at speters@nstep-online.org or at 917-796-7718. You can also register directly at www.nstep-online.org.

March Math Mini-Conference

The Association of Teachers of Mathematics of New York City (ATMNYC) will be hosting its semi-annual mathematics Mini-Conference on Thursday March 13th from 4:00 to 6:00 pm at MS 74Q (61-15 Oceania St., Bayside, NY 11364). Featured speaker will be Richard Kalman, Executive Director of the Math Olympiads for Elementary and Middle Schools (MOEMS) on *The Regional Math Tournament for Grades 4 to 6: Excitement reigns when school teams compete face-to-face!* Refreshments will be served. For further information regarding registration click on http://www.atmnyc.org/2008miniconf1.pdf For further information on the Math Olympiads visit their website at http://www.moems.org/

2008 T³ International Conference February 29-March 2, 2008 Hyatt Regency – Dallas

The 2008 T³ International Conference in Dallas presents professional development and networking opportunities for middle grades through college math and science teachers. The two-and-a-half-day event (their 20th anniversary conference) offers an opportunity to build your teaching skills, enhance your curriculum and lead your students to higher achievement, all by learning to integrate the latest TI technology into your classroom.
There will be more than 400 sessions to attend, filled with hands-on activities and led by some of the most respected presenters in math and science education. For more information, visit http://education.ti.com/educationportal/sites/US/nonProductMulti/pd_conferences_dallas.html

Texas Instruments User Groups for NYC

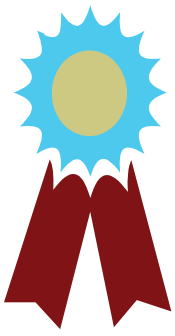
TI-Navigator and TI-Technology User Groups for New York City will meet at DeWitt Clinton High School on April 9 and May 29 from 4:00 to 6:00 pm. You will leave with lesson plans, share strategies with other teachers, and have time for questions and answers. There is always food, beverages, and prizes. Location:
DeWitt Clinton High School, Room 260A
100 West Mosholu Parkway South
Bronx, NY 10468
Parking lot is around the corner on Paul Avenue.
Closest subway is the #4 train, Mosholu Parkway station.

GLOBE Training Program

Under a partnership with Queens College, the Science Technology Engineering and Mathematics (STEM) grant, the Department of Science and Mathematics, will be offering a series of free professional development in GLOBE. Global Learning and Observations to Benefit the Environment, is a hands-on, school-based science education program for primary and secondary schools. Participating teachers and their students collaborate with scientists from around the world while conducting inquiry-based investigations of the environment and the Earth. Space is limited; teachers and schools interested in participating should contact the grant coordinators Alix Jospitre at ajospitre@schools.nyc.gov or Rhenaye Hornsby at rhornsby@schools.nyc.gov for information and registration. More information about the GLOBE program can be found at http://globe.gov/fsl/html/aboutglobe.cgi?intro&lang=en&nav=1.

Presidential Awards for Mathematics and Science

The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) identify outstanding teachers in mathematics and science at the national level. In 2008, teachers of grades K-6 will be eligible for this award. New York State is looking for nominations for outstanding mathematics and science teachers who bring state and national standards to life in their classrooms, spark students' imaginations, have a belief that all students can learn, engage students, and have an overall passion for teaching and learning. If you know of a teacher you feel qualifies for this prestigious honor, visit the Mathematics website at http://www.emsc.nysed.gov/ciai/mst/inform/presaward.htm and click on "Presidential Awards" to find out how to nominate them. *Nominees must submit their applications by May 1, 2008 to be considered.*



January Birthdays

Sonia Kovalevsky January 15

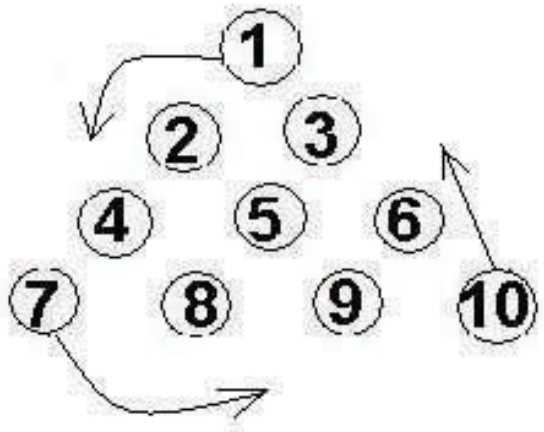
Sonia Kovalevsky (January 15, 1850-February 10, 1891), was the first major Russian female mathematician, the first woman in Europe to earn a doctorate in mathematics (*summa cum laude* 1874 University of Göttingen) and be appointed to a full professorship (1889 Sweden). The Cauchy-Kowalevski theorem is the main theorem on local existence and uniqueness for analytic partial differential equations associated with Cauchy initial value problems. A special case was proved by Augustin Cauchy (1842), and the full result by Sonia Kovalevsky *(1875)*.

David Hilbert January 23

(from *Wikipedia*)

David Hilbert (January 23, 1862 – February 14, 1943) was a German mathematician, recognized as one of the most influential and universal mathematicians of the 19th and early 20th centuries. His 1900 presentation of a collection of problems set the course for much of the mathematical research of the 20th century.
Hilbert and his students supplied significant portions of the mathematical infrastructure required for quantum mechanics and general relativity. He is also known as one of the founders of proof theory, mathematical logic and the distinction between mathematics and metamathematics.

Solution to last month's puzzle



Upcoming Workshops

Our department is offering numerous mathematics workshops in the next several months. Here are the details:

Exploring High School Mathematics with TI-Nspire Technology

Participants will be introduced to the next generation of graphing calculator, the TI-Nspire and will learn how to use this calculator within the HS mathematics classroom. Activities will support the mathematics curriculum of high school. Participants will receive materials and a TI-Nspire calculator.

Target Audience:	HS Math Teachers, Coaches, Supervisors
Grade Level:	9-12
Facilitator(s):	Elaine Carman
Dates:	Apr 23, 24, & 25
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan Stuyvesant HS 345 Chambers St 10282
Cost:	$325
FAMIS Item No:	TLMATH056
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Workshop on Brain Research and Its Implications in the Classroom

Neuroscience, like pedagogy, looks at learning, but from a substantially different point of view. This difference can be illuminating and exciting in its implications for classroom practice. We'll explore the latest research in neurobiology; our emphasis throughout will be on the practical applications of this research to math instruction in all grade levels.

Target Audience:	School Administrators, Coaches, Teachers
Grade Level:	K-12
Facilitator(s):	Ronald Schwarz & Miguel Cordero
Start Date(s):	Apr 4 & May 2
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan City College, NAC Bldg, Rm 3/218 138 St & Convent Ave 10031
Cost:	$175
FAMIS Item No:	TLMATH064
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

How to Promote Interactive Learning in Mathematics Using Hands-On Material

This is a series of two all-day workshops, which will feature a variety of activities appropriate for MS mathematics teachers and coaches. Each workshop will provide interactive learning experiences designed to be consistent with the NYS Mathematics Standards. Samples of activities correlated to Impact Math in grades 6, 7, and 8 will be explored. The hands-on activities presented in

each workshop will help participants disseminate ideas for concretization of mathematical principles promoting content-rich interactive learning in the mathematics classroom and opportunities to explore NYS and NYC assessment items. Through the use of concrete materials (manipulatives), participants will be able to plan, organize, construct, and implement their own mathematical experiences. Pertinent articles will be disseminated in each workshop.

Target Audience:	Teachers, Coaches
Grade Level:	6-8
Dates:	Feb 14 & Feb 28
Time:	9:00 a.m.–3:00 PM
Location:	Manhattan City College, NAC Bldg, Rm 3/218 138th St and Convent Ave 10031
Cost:	$170
FAMIS Item No:	TLMATH049 Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Teaching High School Geometry–Introducing the Next Level (Two Days)

Beginning in September 2008 students in NYS will be studying a new 10th-grade math course, Geometry. Although geometry topics have been taught in Math A and B (and Sequential Math before them), there has not been a complete Geometry course in NYC for more than 30 years. To maximize student achievement, we will be offering two full days of professional development. Participants will have an opportunity to: 1) Examine current and innovative pedagogies related to the teaching and learning of geometry. 2) Expand teachers' knowledge of geometry. 3) Integrate technology and manipulatives into the study of geometry.

Target Audience:	Math APs, Coaches, Teachers
Grade Level:	9-12
Facilitator(s):	Ronald Schwarz & Miguel Cordero
Dates:	Mar 3 & Mar 10, repeated Apr 14 & May 5
Time:	8:30 AM–3:00 PM
Location:	Manhattan City College, NAC Bdg, Rm 3/218 138 St & Convent Ave 10031
Cost:	$175
FAMIS Item No:	TLMATH061, TLMATH062 Click here for information on how to pay for this training in FAMIS.
To Register:	**For Mar 3 & Mar 10 - CLICK HERE.** **For Apr 14 & May 5 – CLICK HERE.**

Integrated Algebra

This is a series of three all-day workshops, where participants will explore the wealth of ancillary materials which accompany the new Integrated Algebra book, including transparencies, graphing calculator resources, class sets of manipulatives, Spanish-language materials, review book, workbooks, assessment options and especially the new online resources, plus ExamView, TeacherExpress, and other technology that is now a part of daily instruction. They will also plan instruction for the next three chapters and practice pedagogical strategies (e.g., Think-Pair-Share, Numbered Heads, Jigsaw) to better reach our students. Breakfast included.

Target Audience:	HS Math Teachers, Math Coaches, Math APs
Grade Level:	8-12
Facilitator(s):	Dr. William Farber & Gerald Haber
Dates:	Apr 1, Apr 15, & May 6
Time:	9:00 a.m.–3:00 p.m.
Location:	Manhattan City College, NAC Bldg, Rm 3/218 138th St and Convent Ave 10031
Cost:	$255
FAMIS Item No:	TLMATH048 Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Mathematical Problem Solving

This series of two all-day workshops will focus on problem solving, which is the primary standard on all standards lists, (e.g., NCTM Standards and the NYS Learning Standards). There is a critical need for students to improve their problem solving skills, identify specific problem solving strategies, and develop effective techniques for transmitting these strategies to other students. This series is designed to provide an intensive development and reinforcement of problem solving skills to teachers and ultimately to their MS students. Moreover, the model used will be group problem solving, giving participants the opportunity to interact, write, draw, view, react, pose questions, and report methodologies and alternative solutions.

Target Audience:	Mathematics Teachers and Coaches
Grade Level:	6-8
Facilitator(s):	Dr. William Farber
Dates:	Apr 3 & Apr 10
Time:	9:00 a.m.–3:00 p.m.
Location:	Manhattan City College, NAC Bldg, Rm 3/218 138th St and Convent Ave 10031
Cost:	$170
FAMIS Item No:	TLMATH050 Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Geometer's Sketchpad–Level 1 Professional Development (Three Days)

Participants will learn how to integrate Sketchpad Version 4 into our uniform curriculum. This will provide the participants with new strategies to assess student understanding; build dynamic, draggable constructions that lead to mathematical insights and conjectures; construct tessellations; and study concepts in algebra. Participants will also investigate trigonometry, the role of proof, conic sections, and other topics while learning how Sketchpad works as a mathematical modeling tool and an exploratory environment for mathematics across the curriculum.

Target Audience:	Math APs, Coaches, Teachers
Grade Level:	2-12
Facilitator(s):	TBA
Dates:	Apr 22, Apr 23, & Apr 24
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan

	Stuyvesant HS 345 Chambers St 10282
Cost:	$250
FAMIS Item No:	TLMATH065
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Geometer's Sketchpad–Level 2 Professional Development (Four Days)

Participants will learn about the features of Sketchpad Version 4 that will deepen their experience while building customized toolkits, multi-page Sketchbooks, and dynamic fractals and graphs. Participants will learn advanced methods and begin to master Sketchpad as the tool to explore Euclidean, coordinate, transformational, analytical, and fractal geometry. They will also harness the full power of Sketchpad for algebra, trigonometry, precalculus, and calculus classrooms. By the end of day four participants will be ready to conduct Level 1 professional development in their schools.

Target Audience:	Math APs, Coaches, Teachers
Grade Level:	2-12
Facilitator(s):	TBA
Dates:	Apr 22, Apr 23, Apr 24, & Apr 25
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan Stuyvesant HS 345 Chambers St 10282
Cost:	$300
FAMIS Item No:	TLMATH066
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Exploring Middle School Mathematics with TI-Nspire Technology

Participants will be introduced to the next generation of graphing calculator, the TI-Nspire and will learn how to use this calculator within the MS mathematics classroom. Activities will support the mathematics curriculum of the middle school. Participants will receive materials and a TI-Nspire graphing calculator.

Target Audience:	Math Teachers, Math Coaches, Math Supervisors
Grade Level:	6-8
Facilitator(s):	Elaine Carman
Dates:	Apr 23, 24, & 25
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan Stuyvesant HS 345 Chambers St 10282
Cost:	$325
FAMIS Item No:	TLMATH055
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Boosting Student Achievement in Math (Grades 7 to 12)

In this series, we will share activities designed to actively engage students in the process of learning and constructing their own meaning. We will analyze NYC data and standard assessments which place more emphasis on problem solving and communication, and explore ways to build student motivation and achievement in these areas, particularly for struggling students. Among other topics that will be discussed are the use of manipulatives (including low-cost/no-cost manipulatives) and the latest research on how people learn mathematics. These are useful materials and strategies for math teachers from grades 7-12.

Target Audience:	Math APs, Coaches, Teachers
Grade Level:	7-12
Facilitator(s):	Ronald Schwarz & Miguel Cordero
Dates:	May 12 & May 19
Time:	8:30 a.m.–3:00 p.m.
Location:	Manhattan City College, NAC Building, Rm 3/218 138 St & Convent Ave 10031
Cost:	$175
FAMIS Item No:	TLMATH060
	Click here for information on how to pay for this training in FAMIS.
To Register:	**CLICK HERE**

Quotes of the Month

Mathematics is not a way of hanging numbers on things so that quantitative answers to ordinary questions can be obtained. It is a language that allows one to think about extraordinary questions.

James Bullock
American Mathematical Monthly
Literacy in the Language of Mathematics
Volume 101, Number 8, October 1994 (p. 737)

To those who do not know mathematics it is difficult to get across a real feeling as to the beauty, the deepest beauty, of nature...If you want to learn about nature, to appreciate nature, it is necessary to understand the language that she speaks in.

Richard Feynman
The Character of Physical Law (Chapter 2, p.58)