

Appendix A

Panel's Response to Nine Elements of its Charge

1. Did the June 2003 Regents Math A exam measure achievement of the New York State mathematics standard three as defined through the core curriculum -- consistent with generally accepted standards for assessment? (Refer to the so-called "Joint Standards.")

Answered in this report.

2. Were there anomalies in the test preparation process that could account for real or perceived changes in the level of difficulty in the June 2003 Regents Math A exam in comparison with prior Math A exams? This includes but is not limited to item writing, pre-testing and field testing (including adequacy of the samples), production scheduling, scaling, equating, final test assembly and review of the completed exam.

Answered in this report.

3. Were groups of students taking the June 2003 Math A exam statistically similar to or different from those taking previous Math A exams?

Answered in this report.

4. Is the June 2003 Regents Math A exam of the same level of difficulty as prior Regents Math A exams? (That is, in addition to the equating included in question 2, consider the content, cognitive demand, and perceived difficulty of the exam.)

Answered in Interim Report and in this report.

5. Is the June 2003 Regents Math A exam of a level of difficulty appropriate for high school graduation? In answering this question, consider available national and international benchmarks.

No, which is what led the Panel to its recommendations in the Interim Report and in this report.

6. Are the word problems at a reading level appropriate to high school? Is the sequence or grouping of more challenging questions a probable cause of lower performance?

Answered in this report.

7. Are there any other factors that could explain the difficulty many students had in meeting the standards with the June 2003 Regents Math A exam? For example, are the guidelines about the exam, which were sent to the schools, clear?

Answered in this report.

8. If the June 2003 Regents Math A exam was not of the same level of difficulty as previous Math A exams, can the results be re-scaled appropriately and used to measure student achievement, and, if so, how?

Answered in Interim Report.

9. What actions does the Panel recommend to improve the Regents Mathematics A testing program?

Answered in this report.

Appendix B

Members of Regents Review Panel for June 2003 Math A Examination

1. William Brosnan, Superintendent of Schools, Northport-East Northport (Long Island)
 - President-Elect, NYS Council of School Superintendents
 - 2003 NYS Superintendent of the Year
 - Former math teacher, chairperson of math, principal and assistant superintendent – Northport
 - Doctor of Education, Teachers College, Columbia University
 - Former President, Suffolk County Superintendents Association

2. Stanley Chapman, Teacher of Mathematics, Clara Barton High School (NYC)
 - Has taught pre-high school math, Consumer Math, Courses I, II and III and Calculus
 - Initiated, developed and supervised after school math center
 - Teacher mentor 2002-03
 - Former actuarial analyst for 10 years – Reliance Insurance Company
 - Graduate work – Long Island University and College of St. Rose

3. Gregory Cizek, Professor of Educational Measurement and Evaluation, University of North Carolina (Chapel Hill)
 - Former Associate Professor of Educational Research and Measurement – University of Toledo
 - Former Program Manager, American College Testing Program
 - Former elementary and middle school teacher
 - Doctor of Philosophy, Michigan State University
 - Member of editorial boards of Journal of Educational Measurement, Educational Measurement: Issues and Practice, Applied Measurement in Education
 - Member, Joint Committee on Testing Practices
 - Former member and vice president of local board of education in Ohio

4. Franco DiPasqua, Math and Science Supervisor for Frontier Central School District (Western New York)
 - Former Math Coordinator K-12, Erie I BOCES
 - Former math integration specialist, Madison-Oneida BOCES
 - Former math teacher, Whitesboro, NY (Utica area)
 - Master of Science, SUNY Albany
 - Trainer, NYS math learning standards
 - Involved in National Council of Teachers of Mathematics, NYS Teachers of Mathematics, NYSED Math Initiative

5. Andrew Giordano, Professional Engineer - Christa Construction (Capital District)
 - Former Project Executive, BBL Construction Services (Albany)
 - Former Resident Engineer, Goodkind and O'Dea Consulting Engineers (New Jersey)
 - Bachelor of Science, Civil Engineering – Clarkson University (Potsdam)
 - Coach and administrator of the NYS Professional Engineers Society's Mathematics Competition (for students)

6. Lidia Gonzalez, Teacher of Mathematics, Washington Irving High School (NYC)
 - Has taught Math Course I, II, III, Math A, Math B, IB Math, pre-Calculus and AP Calculus
 - Previously worked in the Admissions Office at New York University
 - Master of Arts, New York University
 - Affiliated with National Council of Teachers of Mathematics, Association of Mathematics Teachers of New York State, Mathematical Association of America, Mathematics Teachers Committee of the United Federation of Teachers

7. Robert Gyles, Department of Curriculum and Teaching, Hunter College, CUNY
 - Former Deputy Superintendent for Curriculum and Professional Development, CSD 4, NYC
 - Former Director of Math, CSD 4
 - Adjunct Professor, Math Education – Bank Street College
 - Former math teacher in NYC high schools, GED programs, intermediate school, after school gifted program, alternative junior high school
 - Doctor of Philosophy, New York University
 - Former member, Chancellors Advisory Committee on Mathematics Assessment (1991-95) and Commissioners Advisory Committee on Curriculum and Assessment in Math, Science and Computer Technology, NYSED (1995-97)

8. Daniel Jaye, Assistant Principal - Mathematics, Stuyvesant High School (NYC)
 - Former Teacher of Mathematics (Algebra – AP Calculus)
 - Masters' Degrees from City College and College of Staten Island
 - Executive Director
 - NYC Math Team
 - CCNY Scholars Academy in Mathematics and Science
 - NYC Interscholastic Math League
 - Member of Chancellor's Math Commission (2001-02)
 - Member, The Math Association of America; National Council of Teachers of Mathematics; Association of Math Teachers of NYS

9. Sophia Maggelakis, Professor and Department Head, Mathematics and Statistics, Rochester Institute of Technology
 - Former assistant professor, associate professor of mathematics, RIT
 - Doctor of Philosophy, Old Dominion University
 - Recipient of 1998-99 RIT Eisenhart Award for Outstanding Teaching
 - Member of the Pi Mu Epsilon National Honorary Mathematics Society
 - Affiliated with American Mathematical Society, Mathematical Association of America and Society for Industrial and Applied Mathematics

10. Theresa McSweeney, Teacher of Mathematics, Marcellus (Syracuse area)
 - Has taught Math A, Math 8, Pre-Algebra, Life Science
 - Master of Science, SUNY Oswego
 - President, Marcellus Faculty Association
 - NYSUT Policy Council and AFT Convention Delegate (2002)
 - Vice President, Onondaga County Teachers Association
 - Involved in National Council of Teachers of Mathematics and Onondaga County Math Teachers Association

11. Alfred S. Posamentier, Dean, School of Education, City College - CUNY
 - Professor of Mathematics Education 1970 - present
 - Former teacher of mathematics (Theodore Roosevelt High School - NYC), 1964-1970 and part-time supervisor of math and science at Mamaroneck High School, 1975-1978
 - Doctor of Philosophy, Fordham University, 1973
 - Fulbright Professor, University of Vienna (1990)
 - Author of over 30 books on mathematics for students and teachers
 - Former member, local board of education (New Jersey)
 - Involved in Mathematical Association of America, National Council of Teachers of Mathematics and National Council of Supervisors of Mathematics

12. Katherine Staltare, Chairperson, Mathematics Department, Yonkers Public Schools
 - Adjunct professor, Adelphi University, Long Island University, College of St. Rose
 - Has been math teacher, math curriculum developer, staff development facilitator
 - Initiated, developed and implemented Math/Art Program
 - Doctor of Education, Teachers College of Columbia University
 - Affiliated with National Council of Teachers of Mathematics, NYSUT's NYS Committee for Mathematics

13. Alan Tucker, Professor of Applied Mathematics, SUNY Stony Brook

- SUNY Distinguished Teaching Professor
- Co-chair SUNY Task Force on Math Education
- Has been assistant professor, associate professor, professor, department chair, Department of Applied Mathematics and Statistics at SUNY Stony Brook
- Co-project director, \$3.1 million NSF grant, “Preparing Mathematicians to Educate Teachers”
- Doctor of Philosophy, Stanford University
- Has been actively involved with National Research Council, National Science Foundation, Mathematical Association of America (former Chair of Education Council) and American Mathematical Society
- Member of editorial boards of Applied Mathematics Letters and Mathematical and Computer Modeling

Appendix C

Documents Reviewed by Math A Panel

1. Charge to the Panel
2. Agenda - Meeting of the Math A Panel - 7/23/03
3. Summary of July 23, 2003 Math A Panel Meeting
4. Item Response Theory (by Frank Baker)
5. Middle-Level Mathematics - Public School 8th Graders Only
6. Correlations Between Regents Math A Examination, Grade 8 English Language Arts and Grade 8 Mathematics
7. Mathematics Standards and Assessment Review Committee Report
8. Public Analysis of Math A Data - June 2003
9. Math A Conversion Chart - June 2003
10. Math A Performance Comparison (380 Districts)
11. Field Test Data
12. Information Booklet for Administering and Scoring the Regents Examinations in Mathematics A and Mathematics B
13. Subject Letter - Mathematics Section Only
14. Learning Standards for Mathematics, Science and Technology
15. Mathematics, Science, and Technology - (attachment)
16. Standard Setting Summary Report for English Language Arts and Mathematics Regents Examinations
17. Mathematics - Resource Guide with Core Curriculum
18. Information Sheet - Mathematics A Regents Examination
19. Mathematics Regents Examinations: Overview of Test Development Process
20. Past exams and Scoring Keys
 - June 17, 2003
 - January 27, 2003
 - August 13, 2002
 - June 19, 2002
21. Panel Review - Data/Information Requested by Math A Panel (cover sheet)
 - Math A Topic Headings
 - Mathematics A Regents Examination - Test Sampler Draft, Spring 1998
 - Two Sets of Photocopied Item Cards - Items that appeared on the June 2003 Regents Examination in Mathematics A.; items include the four items that were dropped from the June 2003 test.
22. Office of Teaching - NYS Provisional Certification Requirements Checklist
23. Grade 8 Math and Math A Results for Average Need Districts

24. Standards for Educational and Psychological Testing - Copies of pages 9-24 re Validity
25. Panel Review - Data/Information Requested by Math A Panel (cover sheet)
 - Mathematics Regents Examinations: Overview of Test Development Process
 - Office of State Assessment Chart
 - New York State Education Department, Office of State Assessment - Test Development Procedures - January 2001
 - Overview: New York State Education Department Examination Development Process
 - Job Descriptions for New York Work Flow, from IBM Plan
 - Team/Group List
 - Test Development Processes for Pretests; Field Tests; Operational Tests
 - New York State Sensitivity Review Guidelines; Guidelines for Universal Access to Science Questions; Guidelines for Universal Access to Social Studies Questions
 - Guidelines for Item Writing
 - Recommendations for Change, from IBM Plan
 - How Technology Can Support the Process of Creating Tests, from IBM Plan
 - Style Guide for State Examinations
26. Office of State Assessment - Charts, sorted by Response and NRC
27. Communications - emails/memos
28. State Assessment - Data Processing Schedule for April 2001-March 2002
29. Sampling Procedures for Pretests and Field Tests
30. Pretest & Field Test Sampling Procedures
31. Steps to entering field test and pretest reply forms from Schools
32. Data related to the changing nature of workforce needs (Attachments A-E)
33. Data from the manufacturing sector (Attachment F)
34. The skills gap 2001
35. No Child Left Behind Issue Brief
36. Curriculum Instruction and Assessment (Draft) - Framework for Mathematics, Science and Technology
37. Agenda - Meeting of the Math A Panel - 8/19/03-8/20/03
38. Interim Report - Math A Panel
39. Ad Hoc Committee on Curriculum and Assessment - Discussion of "Standards"
40. Panel Review - Data/Information Requested by Math A Panel (cover sheet)
 - Pass rates for four test administrations
41. DATAG Conference: Reduced Version - 7/28/03 - Analysis of the Math A Exam/Item Difficulty - June 2002/January 2003/June 2003

42. 2002 Math A Field Test Sample
43. 2001 New York State Mathematics A Regents Examination - Equating and Scaling Report
44. Item Analysis and Calibration of the New York English Language Arts and Mathematics A Regents Examinations
45. Standard Setting and Equating on the New Generation of New York State Assessments
46. The Paradoxical Nature of Authentic Assessment: A Clash in Paradigms of Bottom Up and Top Down Learning
47. Construct Properties of New York State English Language Arts and Mathematics Examinations - 1998-1999-2000
48. The discussion of rescaling Mathematics A encompasses: a-e
49. California High School Exit Examination
50. Massachusetts Comprehensive Assessment System - IX. Mathematics, Grade 10
51. Principles and Standards for School Mathematics - Chapter 7 - Standards for Grades 9-12
52. California Department of Education - Mathematics - Content Standards for California Public Schools
53. Mathematics Standards of Learning for Virginia Public Schools
54. Arizona Department of Education - Academic Standards & Accountability - Mathematics Standards (Adopted 8/26/96)
55. Wisconsin Department of Public Instruction - Wisconsin Model Academic Standards for Mathematics
56. Michigan Department of Education - Mathematics Content Standards and Benchmarks
57. Integrating Standards in Iowa Classrooms
58. Education World - Curriculum Article - Math Wars!
59. Achieve Releases Math Expectations, Announces Partnership With College Board, Four New States
60. Center on Education Policy - High School Exit Examinations
61. Regents Item - Status Report on Operational Changes Affecting the New York State Assessment System
62. Frontier Central School District - Meeting with Chancellor Bennett - Salient Points
63. Agenda - Meeting of the Math A Panel - 9/10/03-9/11/03
64. Analysis - Math A Panel - Guidance to Teachers as Compared With June 2003 Math A Regents Exam
65. Guide for Writing Items for Regents Mathematics Examinations (Draft September 2003)
66. Guidelines for Mathematics Item Development - State of Ohio (developed by Measurement, Inc.) (Draft 7/18/03)
67. Guide for Writing Items for Regents Mathematics Examinations (Draft 2001)