# New York State Regents Examination in Integrated Algebra:

## 2007 Field Test Analysis, Equating Procedure, and Scaling of Operational Test Forms

### Technical Report

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**Assessment and Evaluation Services**

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# Section I: Introduction

## *Purpose*

The purpose of this report is to document the work of Assessment and Evaluation Services on the New York State Regents Examination in Integrated Algebra for 2007. Specifically, contained within this report are procedures for, and results of, field test analysis, equating, and scaling of operational test forms. Information on test development can be found in the test design and development report for the New York State Regents Examination in Integrated Algebra.

# Section II: Field Test Analysis

In May 2007, field testing was conducted for the New York State Regents Examination in Integrated Algebra to better understand the psychometric quality of the items. The results of this testing are used to help determine items selected for use on operational tests.

Target student samples for participation in this testing were selected such that each would represent the student population expected to take the operational test. The Need/Resource Capacity Categories were used as variables in the sampling plan. See Table 1 for the seven need/resource capacity categories and their definitions.

**Table 1. Need/Resource Capacity Category Definitions**

| Need/Resource Capacity (NRC) Category | Definition |
|---|---|
| High N/RC Districts: New York City | New York City |
| Large Cities | Buffalo, Rochester, Syracuse, Yonkers |
| Urban-Suburban | Districts at or above 70$^{th}$ percentile on the index with at least 100 students per square mile or enrollment greater than 2500 |
| Rural | All districts at or above the 70$^{th}$ percentile with fewer than 50 students per square mile or enrollment of less than 2500 |
| Average N/RC Districts | All districts between the 20$^{th}$ and 70$^{th}$ percentiles on the index |
| Low N/RC Districts | All districts below the 20$^{th}$ percentile on the index |
| Charter Schools | Each charter school is a district |

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The data collected from field testing were scored by two entities. The multiple-choice items were scored by the New York State Education Department and the constructed reponse items were scored by Pearson. Therefore, it was necessary to combine data files for data analysis. Both classical and item response theory analyses were conducted using the data to evaluate the quality of the test items.

## *File Merging and Data Clean-up*

Field test forms contained multiple choice and constructed response item types. Response data were contained in two separate files. The multiple-choice data file contained 20,728 student records and the constructed response data file contained 21,409 student records. These two data files were merged using students' unique test booklet numbers. The resulting field test data file contained 20,416 matched records, containing 95% of the multiple-choice data and 98% of the constructed response data. Thus, there was a high degree of matched data.

Upon completion of the matching process, each student record with missing data on all of the field test items was removed from the data files. All other data records were kept in the data files.

Multiple-choice response data were then compared to the answer key. All item responses not matching the answer key were assigned scores of 0. The responses matching the answer key were assigned scores of 1. With respect to the constructed response items, all scores of 1, 2, 3, and 4 were kept and all other values were assigned scores of 0. In addition, blanks (i.e., missing data) were assigned scores of 0 to be consistent with how operational test items are scored.

The final data file contained both the scored and unscored student responses. Unscored data was used to calculate the percent of students who selected the various answer choices for the multiple-choice items or the percent of students who received the possible raw score points for the constructed response items. Thus, the frequency of students leaving items blank can be calculated. The scored data was used for all other analyses.

## *Classical Analysis*

Classical Test Theory is based on the assumption that an observed test score $x$ is composed of both true score $t$ and error score $e$. This assumption is expressed as follows:

$$x = t + e$$

In other words, error is associated with measuring a student's true score. For example, the choice of test items or the administration conditions may influence student responses.

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However, if the student is tested under all conditions, items, and times, the average of all the test scores would be a more unbiased estimate of the student's true score on the assessment.

Error is considered random. Therefore, a student's observed score may be higher or lower than the student's true score. After repeated administrations, the mean of the error scores is virtually zero. Thus, a student's observed score is expected to equal his or her true score. This expectation is expressed as follows:

$$E(x) = t$$

With repeated administrations of test items, we can determine the consistency of students' responses. Specifically, with the use of field test data, classical analyses are used to evaluate the quality of test items according to their difficulty and consistency by which they identify students who understand a concept from those who do not understand the concept.

**Item difficulty**. With respect to multiple choice items, item difficulty is the proportion of students who answer an item correctly. If 90% of the student responses to a multiple-choice item are correct, this item is considered easier than a multiple-choice item with correct responses by 30% of the students.

With respect to constructed response items, students have the opportunity to receive partial credit for answers that do not meet all of the requirements specified in the scoring rubric. To assess the difficulty of these items, the mean (i.e., average score) is used. If an item has a maximum possible score of 6 and the item mean is 5.5, it is considered easier than an item with the same maximum possible score and a mean of 1.5.

**Point-biserial correlation**. Another classical statistic used to evaluate multiple-choice items is the point-biserial correlation. This statistic is used to evaluate how well an item identifies students who understand the concept being measured. For constructed response items, the same statistic is sometimes referred to as an item-test correlation. This statistic ranges from -1.0 to +1.0. Items with large values provide a lot of information about how well students understand the concept being assessed.

Table 2 presents a summary of the classical item analysis for each of the field test forms. The first column lists the form number. The next two columns list the number of students who participated and the number of items on each field test form. The remaining columns are divided into two sections (i.e., item means and point-biserial correlations). Most of these means fell between .50 and .90 while some were outside of this range. With respect to the point-biserial correlations, most of these correlations fell between .25 and .50 while some were outside this range. Thus, items can be used to discriminate among students with respect to the construct being measured.

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**Table 2. Classical Item Analysis**

| Form | N-count | No. of Items | Item Mean | | | Point Biserial | | |
|---|---|---|---|---|---|---|---|---|
| | | | < 0.50 | 0.50 to 0.90 | > 0.90 | < 0.25 | 0.25 to 0.50 | > 0.50 |
| 651 | 790 | 11 | 9 | 2 | 0 | 0 | 9 | 2 |
| 652 | 792 | 11 | 9 | 2 | 0 | 0 | 8 | 3 |
| 653 | 796 | 10 | 8 | 2 | 0 | 1 | 8 | 1 |
| 654 | 784 | 11 | 8 | 3 | 0 | 1 | 8 | 2 |
| 655 | 786 | 11 | 9 | 2 | 0 | 0 | 8 | 3 |
| 656 | 765 | 11 | 8 | 3 | 0 | 0 | 8 | 3 |
| 657 | 775 | 11 | 8 | 3 | 0 | 1 | 7 | 3 |
| 658 | 773 | 11 | 6 | 5 | 0 | 0 | 6 | 5 |
| 659 | 794 | 11 | 8 | 3 | 0 | 0 | 8 | 3 |
| 660 | 790 | 10 | 8 | 2 | 0 | 1 | 6 | 3 |
| 661 | 789 | 11 | 8 | 3 | 0 | 0 | 7 | 4 |
| 662 | 776 | 11 | 9 | 2 | 0 | 3 | 7 | 1 |
| 663 | 766 | 11 | 6 | 5 | 0 | 1 | 6 | 4 |
| 664 | 758 | 10 | 8 | 2 | 0 | 0 | 8 | 2 |
| 665 | 760 | 11 | 10 | 1 | 0 | 1 | 8 | 2 |
| 666 | 764 | 11 | 7 | 4 | 0 | 0 | 7 | 4 |
| 667 | 781 | 11 | 6 | 5 | 0 | 0 | 9 | 2 |
| 668 | 790 | 11 | 8 | 2 | 1 | 1 | 7 | 3 |
| 669 | 786 | 11 | 8 | 3 | 0 | 0 | 8 | 3 |
| 670 | 797 | 11 | 6 | 5 | 0 | 0 | 7 | 4 |
| 671 | 785 | 11 | 7 | 4 | 0 | 1 | 5 | 5 |
| 672 | 794 | 11 | 6 | 5 | 0 | 0 | 10 | 1 |
| 673 | 786 | 11 | 7 | 4 | 0 | 1 | 7 | 3 |
| 674 | 790 | 11 | 8 | 3 | 0 | 1 | 6 | 4 |
| 675 | 783 | 11 | 6 | 5 | 0 | 0 | 9 | 2 |
| 676 | 788 | 11 | 10 | 1 | 0 | 0 | 9 | 2 |

* A complete listing of all Classical Item Analysis results are presented in Appendix B.

In addition to the summary information provided in Table 3, all of the classical item statistics are provided in Appendix B. NCOUNT refers to the number of student records in the analysis. ALPHA contains the internal consistency statistics discussed below. B and M0 represent the proportion of students who left the item blank for the constructed response items and the multiple-choice items, respectively. M0–M6 are proportions of students who received scores 0 through 6 for the constructed response items. M1–M4 are proportions of students who selected each of the four answer choices for the multiple-choice items. The item mean is the average of the scores received by the students for the multiple-choice items. The item mean also represents the proportion of students who answered the item correctly. Finally, the column "PBS" contains the point-biserial correlation for each item.

**Test reliability**. Classical analysis can also be used to measure the reliability of the test. The internal consistency estimate is a measure of how consistent items differentiate students with respect to the quality measured by the whole test. Generally, the more test items, the

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more consistent or reliable the test. In addition to test length, the quality of the items as indicated by point-biserial correlation statistics also helps to understand test reliability.

Cronbach's α (alpha) has an important use as a measure of the internal consistency of a test. This formula is the extension of an earlier version, the Kuder-Richardson Formula 20 (KR-20), which is the equivalent for dichotomous items.

Table 3 contains the internal consistency statistics for all of the field test forms. These statistics ranged from 0.50 to 0.75 and are based solely on the items in the individual field test forms. It is expected that these statistics associated with the operational tests would be greater because there are more items on the operational test forms. Appendix A contains the field test maps containing the number and type of test items on each field test form.

**Table 3. Test and Scoring Reliability**

| Form | Test Reliability | Scoring Reliability |
|---|---|---|
| 651 | 0.60 | 0.94 |
| 652 | 0.68 | 0.95 |
| 653 | 0.50 | 0.96 |
| 654 | 0.58 | 0.97 |
| 655 | 0.58 | 0.96 |
| 656 | 0.62 | 0.96 |
| 657 | 0.61 | 0.96 |
| 658 | 0.75 | 0.96 |
| 659 | 0.61 | 0.98 |
| 660 | 0.57 | 0.94 |
| 661 | 0.66 | 0.95 |
| 662 | 0.60 | 0.96 |
| 663 | 0.63 | 0.95 |
| 664 | 0.64 | 0.97 |
| 665 | 0.58 | 0.92 |
| 666 | 0.70 | 0.94 |
| 667 | 0.65 | 0.92 |
| 668 | 0.69 | 0.99 |
| 669 | 0.67 | 0.94 |
| 670 | 0.67 | 0.93 |
| 671 | 0.62 | 0.98 |
| 672 | 0.63 | 0.95 |
| 673 | 0.65 | 0.98 |
| 674 | 0.69 | 0.96 |
| 675 | 0.68 | 0.98 |
| 676 | 0.52 | 0.96 |

**Scoring reliability**. One concern with constructed response items is the reliability of the scoring process (i.e., consistency of the score assignment). Constructed response items must be read by scorers who assign scores based on a comparison between the rubric and students' responses. Consistency in the way scores are assigned is a critical part of the reliability of

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the assessment. To measure this consistency, 10% of the test booklets are scored a second time (i.e., second read scores) and compared to the original set of scores (i.e., first read scores).

As an overall measure of scoring reliability, the Pearson Correlation Coefficient between the first and second scores for each of the constructed response items was computed. This statistic is often used as an overall indicator of scoring reliability and generally ranges from 0.00 to near 1.00. Table 3 contains the results from these analyses in the column headed Scoring Reliability. The correlations ranged from 0.92 to 0.99, indicating a very high degree of scoring reliability.

**Inter-rater agreement**. For each constructed response item, the difference between the first and second reads was computed. The proportion of times these differences occurred was calculated.

Table 4 contains the differences between the first and second reads for all constructed response items by field test form. There were very few instances when the absolute difference between the two scores was greater than 2. There were only 3 items where differences greater than 1 occurred.

**Table 4. Point Differences Between First and Second Reads**

| Form | Score Points | Difference (First Read minus Second Read) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 651 | 2 | 0.00 | 0.00 | 0.08 | 0.84 | 0.07 | 0.00 | 0.00 |
| 651 | 3 | 0.00 | 0.01 | 0.05 | 0.90 | 0.04 | 0.00 | 0.00 |
| 651 | 4 | 0.00 | 0.04 | 0.00 | 0.93 | 0.02 | 0.01 | 0.00 |
| 652 | 3 | 0.00 | 0.00 | 0.05 | 0.89 | 0.06 | 0.00 | 0.00 |
| 652 | 4 | 0.00 | 0.05 | 0.06 | 0.84 | 0.04 | 0.01 | 0.00 |
| 652 | 2 | 0.00 | 0.00 | 0.02 | 0.88 | 0.10 | 0.00 | 0.00 |
| 653 | 2 | 0.00 | 0.00 | 0.00 | 0.99 | 0.01 | 0.00 | 0.00 |
| 653 | | | | | | | | |
| 653 | 3 | 0.00 | 0.00 | 0.02 | 0.90 | 0.07 | 0.00 | 0.00 |
| 654 | 2 | 0.00 | 0.00 | 0.02 | 0.95 | 0.02 | 0.00 | 0.00 |
| 654 | 2 | 0.00 | 0.00 | 0.04 | 0.90 | 0.06 | 0.00 | 0.00 |
| 654 | 4 | 0.00 | 0.00 | 0.04 | 0.95 | 0.01 | 0.00 | 0.00 |
| 655 | 4 | 0.00 | 0.00 | 0.02 | 0.89 | 0.07 | 0.01 | 0.00 |
| 655 | 4 | 0.00 | 0.01 | 0.02 | 0.89 | 0.06 | 0.01 | 0.00 |
| 655 | 2 | 0.00 | 0.00 | 0.00 | 0.99 | 0.01 | 0.00 | 0.00 |
| 656 | 2 | 0.00 | 0.00 | 0.00 | 0.96 | 0.03 | 0.01 | 0.00 |
| 656 | 3 | 0.00 | 0.00 | 0.05 | 0.85 | 0.10 | 0.00 | 0.00 |
| 656 | 4 | 0.00 | 0.00 | 0.01 | 0.99 | 0.00 | 0.00 | 0.00 |

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| Form | Score Points | Difference (First Read minus Second Read) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 657 | 2 | 0.00 | 0.00 | 0.04 | 0.90 | 0.06 | 0.00 | 0.00 |
| 657 | 3 | 0.00 | 0.01 | 0.05 | 0.89 | 0.04 | 0.01 | 0.00 |
| 657 | 4 | 0.00 | 0.00 | 0.01 | 0.98 | 0.00 | 0.01 | 0.00 |
| 658 | 3 | 0.00 | 0.01 | 0.01 | 0.94 | 0.04 | 0.00 | 0.00 |
| 658 | 4 | 0.00 | 0.00 | 0.05 | 0.91 | 0.02 | 0.01 | 0.00 |
| 658 | 2 | 0.00 | 0.00 | 0.01 | 0.96 | 0.02 | 0.00 | 0.00 |
| 659 | 4 | 0.00 | 0.00 | 0.02 | 0.93 | 0.04 | 0.01 | 0.00 |
| 659 | 3 | 0.00 | 0.00 | 0.02 | 0.98 | 0.00 | 0.00 | 0.00 |
| 659 | 3 | 0.00 | 0.00 | 0.05 | 0.93 | 0.02 | 0.00 | 0.00 |
| 660 | 2 | 0.00 | 0.00 | 0.02 | 0.94 | 0.04 | 0.00 | 0.00 |
| 660 | | | | | | | | |
| 660 | 2 | 0.00 | 0.00 | 0.01 | 0.95 | 0.04 | 0.00 | 0.00 |
| 661 | 3 | 0.00 | 0.01 | 0.00 | 0.93 | 0.02 | 0.04 | 0.00 |
| 661 | 4 | 0.00 | 0.01 | 0.05 | 0.84 | 0.07 | 0.02 | 0.00 |
| 661 | 2 | 0.00 | 0.00 | 0.07 | 0.90 | 0.02 | 0.00 | 0.00 |
| 662 | 4 | 0.00 | 0.00 | 0.05 | 0.90 | 0.05 | 0.00 | 0.00 |
| 662 | 1 | 0.00 | 0.00 | 0.01 | 0.94 | 0.05 | 0.00 | 0.00 |
| 662 | 3 | 0.00 | 0.00 | 0.04 | 0.91 | 0.04 | 0.00 | 0.01 |
| 663 | 2 | 0.00 | 0.00 | 0.00 | 0.95 | 0.05 | 0.00 | 0.00 |
| 663 | 3 | 0.00 | 0.00 | 0.04 | 0.87 | 0.08 | 0.01 | 0.00 |
| 663 | 4 | 0.00 | 0.00 | 0.01 | 0.94 | 0.00 | 0.05 | 0.00 |
| 664 | | | | | | | | |
| 664 | 4 | 0.00 | 0.00 | 0.06 | 0.89 | 0.05 | 0.00 | 0.00 |
| 664 | 2 | 0.00 | 0.00 | 0.04 | 0.95 | 0.01 | 0.00 | 0.00 |
| 665 | 4 | 0.00 | 0.03 | 0.01 | 0.89 | 0.05 | 0.01 | 0.01 |
| 665 | 2 | 0.00 | 0.00 | 0.00 | 0.99 | 0.01 | 0.00 | 0.00 |
| 665 | 2 | 0.00 | 0.00 | 0.05 | 0.82 | 0.13 | 0.00 | 0.00 |
| 666 | 2 | 0.00 | 0.00 | 0.02 | 0.88 | 0.07 | 0.02 | 0.00 |
| 666 | 2 | 0.00 | 0.00 | 0.02 | 0.85 | 0.12 | 0.00 | 0.00 |
| 666 | 3 | 0.01 | 0.00 | 0.11 | 0.74 | 0.12 | 0.01 | 0.00 |
| 667 | 3 | 0.00 | 0.01 | 0.06 | 0.87 | 0.06 | 0.00 | 0.00 |
| 667 | 4 | 0.00 | 0.01 | 0.00 | 0.95 | 0.02 | 0.00 | 0.00 |
| 667 | 2 | 0.00 | 0.00 | 0.02 | 0.94 | 0.02 | 0.01 | 0.00 |
| 668 | 4 | 0.00 | 0.01 | 0.00 | 0.98 | 0.01 | 0.00 | 0.00 |
| 668 | 2 | 0.00 | 0.00 | 0.01 | 0.99 | 0.00 | 0.00 | 0.00 |
| 668 | 3 | 0.00 | 0.01 | 0.05 | 0.93 | 0.01 | 0.00 | 0.00 |
| 669 | 2 | 0.00 | 0.00 | 0.06 | 0.88 | 0.06 | 0.00 | 0.00 |
| 669 | 3 | 0.00 | 0.00 | 0.02 | 0.96 | 0.01 | 0.00 | 0.00 |
| 669 | 4 | 0.00 | 0.01 | 0.10 | 0.75 | 0.12 | 0.01 | 0.00 |

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| Form | Score Points | Difference (First Read minus Second Read) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 670 | 3 | 0.00 | 0.00 | 0.02 | 0.90 | 0.05 | 0.02 | 0.00 |
| 670 | 3 | 0.00 | 0.00 | 0.02 | 0.93 | 0.05 | 0.00 | 0.00 |
| 670 | 2 | 0.00 | 0.00 | 0.02 | 0.96 | 0.01 | 0.00 | 0.00 |
| 671 | 4 | 0.00 | 0.00 | 0.04 | 0.93 | 0.04 | 0.00 | 0.00 |
| 671 | 2 | 0.00 | 0.00 | 0.02 | 0.98 | 0.00 | 0.00 | 0.00 |
| 671 | 3 | 0.00 | 0.00 | 0.02 | 0.98 | 0.00 | 0.00 | 0.00 |
| 672 | 2 | 0.00 | 0.00 | 0.04 | 0.93 | 0.04 | 0.00 | 0.00 |
| 672 | 3 | 0.00 | 0.00 | 0.01 | 0.95 | 0.01 | 0.02 | 0.00 |
| 672 | 4 | 0.00 | 0.01 | 0.01 | 0.92 | 0.06 | 0.00 | 0.00 |
| 673 | 2 | 0.00 | 0.00 | 0.01 | 0.98 | 0.01 | 0.00 | 0.00 |
| 673 | 4 | 0.00 | 0.00 | 0.00 | 0.95 | 0.05 | 0.00 | 0.00 |
| 673 | 3 | 0.00 | 0.00 | 0.00 | 0.93 | 0.06 | 0.01 | 0.00 |
| 674 | 2 | 0.00 | 0.02 | 0.07 | 0.84 | 0.05 | 0.01 | 0.00 |
| 674 | 4 | 0.00 | 0.00 | 0.01 | 0.96 | 0.02 | 0.00 | 0.00 |
| 674 | 3 | 0.00 | 0.00 | 0.02 | 0.89 | 0.05 | 0.04 | 0.00 |
| 675 | 2 | 0.00 | 0.00 | 0.00 | 0.99 | 0.01 | 0.00 | 0.00 |
| 675 | 3 | 0.00 | 0.00 | 0.02 | 0.95 | 0.02 | 0.00 | 0.00 |
| 675 | 4 | 0.00 | 0.00 | 0.01 | 0.98 | 0.00 | 0.01 | 0.00 |
| 676 | 2 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| 676 | 3 | 0.00 | 0.00 | 0.10 | 0.89 | 0.01 | 0.00 | 0.00 |
| 676 | 2 | 0.00 | 0.00 | 0.01 | 0.98 | 0.01 | 0.00 | 0.00 |

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Table 5 contains additional summary information. In the fourth column the percent of exact matches between the first and second scores is provided. "Approx." is the percent of differences with a magnitude of one. "Total" is the sum of the two prior columns and contains values between 94.9% and 100%. These high values indicate a high amount of agreement.

**Table 5. Item Means, Intra-class Correlations, and Weighted Kappa Using First and Second Reads.**

| Form | Score Points | Total N-Count | Agreement (%) | | | RS Mean | | RS SD | | Intra-Class Corre-lation | Weighted Kappa |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Exact | Approx. | Total | First Read | Second Read | First Read | Second Read | | |
| 651 | 2 | 83 | 84.3 | 15.7 | 100.0 | 0.8 | 0.8 | 0.86 | 0.85 | 0.94 | 0.75 |
| 651 | 3 | 83 | 90.4 | 8.4 | 98.8 | 0.5 | 0.6 | 0.80 | 0.79 | 0.95 | 0.83 |
| 651 | 4 | 83 | 92.8 | 2.4 | 95.2 | 1.0 | 1.0 | 1.30 | 1.29 | 0.97 | 0.87 |
| 652 | 3 | 83 | 89.2 | 10.8 | 100.0 | 0.5 | 0.5 | 0.77 | 0.70 | 0.95 | 0.80 |
| 652 | 4 | 83 | 84.3 | 9.6 | 94.0 | 2.3 | 2.4 | 1.63 | 1.54 | 0.97 | 0.79 |
| 652 | 2 | 83 | 88.0 | 12.0 | 100.0 | 1.2 | 1.1 | 0.81 | 0.79 | 0.95 | 0.82 |
| 653 | 2 | 83 | 98.8 | 1.2 | 100.0 | 0.2 | 0.2 | 0.41 | 0.40 | 0.98 | 0.96 |
| 653 | | | | | | | | | | | |
| 653 | 3 | 83 | 90.4 | 9.6 | 100.0 | 0.7 | 0.7 | 1.06 | 1.03 | 0.98 | 0.83 |
| 654 | 2 | 82 | 95.1 | 4.9 | 100.0 | 0.3 | 0.3 | 0.59 | 0.59 | 0.96 | 0.86 |
| 654 | 2 | 82 | 90.2 | 9.8 | 100.0 | 0.2 | 0.2 | 0.55 | 0.52 | 0.91 | 0.68 |
| 654 | 4 | 82 | 95.1 | 4.9 | 100.0 | 0.7 | 0.7 | 1.05 | 1.03 | 0.99 | 0.91 |
| 655 | 4 | 82 | 89.0 | 9.8 | 98.8 | 0.6 | 0.6 | 1.26 | 1.26 | 0.98 | 0.73 |
| 655 | 4 | 82 | 89.0 | 8.5 | 97.6 | 0.7 | 0.6 | 1.08 | 1.05 | 0.96 | 0.80 |
| 655 | 2 | 82 | 98.8 | 1.2 | 100.0 | 0.4 | 0.4 | 0.62 | 0.61 | 0.99 | 0.97 |
| 656 | 2 | 80 | 96.3 | 2.5 | 98.8 | 1.5 | 1.4 | 0.87 | 0.90 | 0.98 | 0.91 |
| 656 | 3 | 80 | 85.0 | 15.0 | 100.0 | 0.6 | 0.5 | 0.61 | 0.59 | 0.89 | 0.72 |
| 656 | 4 | 80 | 98.8 | 1.3 | 100.0 | 0.4 | 0.4 | 0.94 | 0.97 | 1.00 | 0.95 |
| 657 | 2 | 80 | 90.0 | 10.0 | 100.0 | 0.6 | 0.5 | 0.79 | 0.79 | 0.96 | 0.81 |
| 657 | 3 | 80 | 88.8 | 8.8 | 97.5 | 1.6 | 1.6 | 1.28 | 1.30 | 0.97 | 0.84 |
| 657 | 4 | 80 | 97.5 | 1.3 | 98.8 | 0.6 | 0.5 | 0.99 | 0.92 | 0.98 | 0.95 |
| 658 | 3 | 82 | 93.9 | 4.9 | 98.8 | 0.7 | 0.7 | 1.02 | 1.01 | 0.98 | 0.90 |
| 658 | 4 | 82 | 91.5 | 7.3 | 98.8 | 0.8 | 0.8 | 1.15 | 1.16 | 0.98 | 0.86 |
| 658 | 2 | 82 | 96.3 | 3.7 | 100.0 | 0.2 | 0.1 | 0.45 | 0.45 | 0.95 | 0.83 |
| 659 | 4 | 83 | 92.8 | 6.0 | 98.8 | 0.4 | 0.4 | 1.09 | 1.03 | 0.98 | 0.76 |
| 659 | 3 | 83 | 97.6 | 2.4 | 100.0 | 0.7 | 0.7 | 1.11 | 1.10 | 1.00 | 0.95 |
| 659 | 3 | 83 | 92.8 | 7.2 | 100.0 | 0.7 | 0.7 | 0.95 | 0.98 | 0.98 | 0.88 |
| 660 | 2 | 82 | 93.9 | 6.1 | 100.0 | 0.7 | 0.7 | 0.84 | 0.85 | 0.98 | 0.90 |

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| Form | Score Points | Total N-Count | Agreement (%) | | | RS Mean | | RS SD | | Intra-Class Corre-lation | Weighted Kappa |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Exact | Approx. | Total | First Read | Second Read | First Read | Second Read | | |
| 660 | | | | | | | | | | | |
| 660 | 2 | 82 | 95.1 | 4.9 | 100.0 | 0.4 | 0.4 | 0.54 | 0.54 | 0.96 | 0.90 |
| 661 | 3 | 81 | 92.6 | 2.5 | 95.1 | 1.0 | 0.9 | 1.34 | 1.34 | 0.97 | 0.85 |
| 661 | 4 | 81 | 84.0 | 12.3 | 96.3 | 0.9 | 0.9 | 1.14 | 1.05 | 0.94 | 0.74 |
| 661 | 2 | 81 | 90.1 | 9.9 | 100.0 | 0.4 | 0.5 | 0.67 | 0.65 | 0.94 | 0.81 |
| 662 | 4 | 79 | 89.9 | 10.1 | 100.0 | 2.0 | 2.0 | 1.43 | 1.46 | 0.99 | 0.87 |
| 662 | 2 | 79 | 93.7 | 6.3 | 100.0 | 0.2 | 0.2 | 0.40 | 0.37 | 0.88 | 0.79 |
| 662 | 3 | 79 | 91.1 | 7.6 | 98.7 | 0.5 | 0.4 | 0.85 | 0.82 | 0.93 | 0.80 |
| 663 | 2 | 79 | 94.9 | 5.1 | 100.0 | 1.3 | 1.2 | 0.83 | 0.85 | 0.98 | 0.92 |
| 663 | 3 | 79 | 87.3 | 11.4 | 98.7 | 0.5 | 0.4 | 0.82 | 0.62 | 0.92 | 0.73 |
| 663 | 4 | 79 | 93.7 | 1.3 | 94.9 | 0.5 | 0.5 | 1.17 | 1.15 | 0.96 | 0.80 |
| 664 | | | | | | | | | | | |
| 664 | 4 | 79 | 88.6 | 11.4 | 100.0 | 1.5 | 1.5 | 1.32 | 1.33 | 0.98 | 0.85 |
| 664 | 2 | 79 | 94.9 | 5.1 | 100.0 | 0.2 | 0.2 | 0.50 | 0.51 | 0.95 | 0.80 |
| 665 | 4 | 79 | 88.6 | 6.3 | 94.9 | 0.5 | 0.4 | 1.03 | 0.95 | 0.91 | 0.66 |
| 665 | 2 | 79 | 98.7 | 1.3 | 100.0 | 0.3 | 0.2 | 0.56 | 0.56 | 0.99 | 0.96 |
| 665 | 2 | 79 | 82.3 | 17.7 | 100.0 | 0.8 | 0.7 | 0.81 | 0.76 | 0.92 | 0.72 |
| 666 | 2 | 81 | 87.7 | 9.9 | 97.5 | 0.9 | 0.8 | 0.92 | 0.92 | 0.94 | 0.79 |
| 666 | 2 | 81 | 85.2 | 14.8 | 100.0 | 0.3 | 0.2 | 0.54 | 0.49 | 0.84 | 0.51 |
| 666 | 3 | 81 | 74.1 | 23.5 | 97.5 | 1.6 | 1.6 | 1.32 | 1.32 | 0.94 | 0.62 |
| 667 | 3 | 82 | 86.6 | 12.2 | 98.8 | 0.8 | 0.9 | 1.15 | 1.16 | 0.97 | 0.78 |
| 667 | 4 | 82 | 95.1 | 2.4 | 97.6 | 0.3 | 0.3 | 1.01 | 0.94 | 0.93 | 0.76 |
| 667 | 2 | 82 | 93.9 | 4.9 | 98.8 | 0.3 | 0.3 | 0.65 | 0.62 | 0.94 | 0.79 |
| 668 | 4 | 83 | 97.6 | 1.2 | 98.8 | 0.7 | 0.7 | 1.33 | 1.35 | 0.99 | 0.95 |
| 668 | 2 | 83 | 98.8 | 1.2 | 100.0 | 1.0 | 1.0 | 0.82 | 0.83 | 1.00 | 0.98 |
| 668 | 3 | 83 | 92.8 | 6.0 | 98.8 | 0.7 | 0.7 | 0.83 | 0.89 | 0.96 | 0.88 |
| 669 | 2 | 81 | 87.7 | 12.3 | 100.0 | 0.9 | 0.9 | 0.95 | 0.93 | 0.96 | 0.79 |
| 669 | 3 | 81 | 96.3 | 3.7 | 100.0 | 0.6 | 0.6 | 1.15 | 1.15 | 0.99 | 0.91 |
| 669 | 4 | 81 | 75.3 | 22.2 | 97.5 | 0.9 | 0.9 | 1.19 | 1.24 | 0.94 | 0.61 |
| 670 | 3 | 82 | 90.2 | 7.3 | 97.6 | 0.5 | 0.5 | 1.00 | 0.98 | 0.96 | 0.73 |
| 670 | 3 | 82 | 92.7 | 7.3 | 100.0 | 0.5 | 0.5 | 0.77 | 0.72 | 0.97 | 0.85 |
| 670 | 2 | 82 | 96.3 | 3.7 | 100.0 | 0.1 | 0.1 | 0.32 | 0.34 | 0.91 | 0.75 |
| 671 | 4 | 82 | 92.7 | 7.3 | 100.0 | 0.6 | 0.6 | 1.21 | 1.22 | 0.99 | 0.83 |
| 671 | 2 | 82 | 97.6 | 2.4 | 100.0 | 0.2 | 0.2 | 0.38 | 0.40 | 0.96 | 0.92 |
| 671 | 3 | 82 | 97.6 | 2.4 | 100.0 | 0.2 | 0.2 | 0.53 | 0.54 | 0.98 | 0.88 |
| 672 | 2 | 83 | 92.8 | 7.2 | 100.0 | 0.8 | 0.8 | 0.90 | 0.88 | 0.98 | 0.88 |
| 672 | 3 | 83 | 95.2 | 2.4 | 97.6 | 0.3 | 0.3 | 0.84 | 0.81 | 0.95 | 0.79 |
| 672 | 4 | 83 | 91.6 | 7.2 | 98.8 | 0.3 | 0.3 | 0.95 | 0.97 | 0.97 | 0.64 |
| 673 | 2 | 81 | 97.5 | 2.5 | 100.0 | 0.5 | 0.5 | 0.80 | 0.80 | 0.99 | 0.94 |

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| Form | Score Points | Total N-Count | Agreement (%) | | | RS Mean | | RS SD | | Intra-Class Corre-lation | Weighted Kappa |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Exact | Approx. | Total | First Read | Second Read | First Read | Second Read | | |
| 673 | 4 | 81 | 95.1 | 4.9 | 100.0 | 0.6 | 0.5 | 1.04 | 1.02 | 0.99 | 0.90 |
| 673 | 3 | 81 | 92.6 | 6.2 | 98.8 | 0.5 | 0.4 | 0.90 | 0.78 | 0.96 | 0.84 |
| 674 | 2 | 81 | 84.0 | 12.3 | 96.3 | 0.2 | 0.3 | 0.60 | 0.64 | 0.79 | 0.48 |
| 674 | 4 | 81 | 96.3 | 3.7 | 100.0 | 0.8 | 0.8 | 1.35 | 1.34 | 0.99 | 0.93 |
| 674 | 3 | 81 | 88.9 | 7.4 | 96.3 | 1.5 | 1.4 | 1.33 | 1.31 | 0.97 | 0.84 |
| 675 | 2 | 81 | 98.8 | 1.2 | 100.0 | 1.0 | 1.0 | 0.82 | 0.82 | 1.00 | 0.98 |
| 675 | 3 | 81 | 95.1 | 4.9 | 100.0 | 0.2 | 0.2 | 0.55 | 0.55 | 0.96 | 0.80 |
| 675 | 4 | 81 | 97.5 | 1.2 | 98.8 | 0.5 | 0.4 | 1.18 | 1.17 | 0.99 | 0.91 |
| 676 | 2 | 82 | 100.0 | 0.0 | 100.0 | 0.1 | 0.1 | 0.38 | 0.38 | 1.00 | 1.00 |
| 676 | 3 | 82 | 89.0 | 11.0 | 100.0 | 0.3 | 0.4 | 0.68 | 0.73 | 0.94 | 0.74 |
| 676 | 2 | 82 | 97.6 | 2.4 | 100.0 | 0.6 | 0.6 | 0.79 | 0.79 | 0.99 | 0.96 |

* Approx. = difference of one; RS Mean = Raw Score Mean; RS SD = Raw Score Standard Deviation

**Item means and standard deviations**. The average score for each constructed response item was computed based on the first and second reads. In addition, the standard deviation of the scores was also computed.

Table 5 contains the means and standard deviations for the first and second scores. The largest difference between the item means for the first and second scores was 0.1 while there were minimal differences among standard deviation statistics. When considering that each constructed response item has a maximum of six points possible, there was a very high level of consistency.

**Intra-class correlation**. The intra-class correlation was computed for each item. This correlation is an estimate of the reliability of scoring based on an average of the first and second reads.

Correlations greater than 0.60 are considered very strong because they explain more than one-third of the variance in scores. All of the intra-class correlations except one (form 674) are greater than 0.91 (See Table 5). Consistent with other information provided in the table, these values indicate a very high level of scoring reliability.

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**Table 6. Partial Credit Model Item Analysis**

| Form | N-count | No. of Items | Rasch | | | INFIT | | |
|---|---|---|---|---|---|---|---|---|
| | | | < -2.0 | -2.0 to 2.0 | > 2.0 | < -.70 | -.70 to 1.30 | > 1.30 |
| 651 | 790 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 652 | 792 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 653 | 796 | 10 | 0 | 10 | 0 | 0 | 10 | 0 |
| 654 | 784 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 655 | 786 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 656 | 765 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 657 | 775 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 658 | 773 | 11 | 2 | 9 | 0 | 0 | 11 | 0 |
| 659 | 794 | 11 | 0 | 11 | 0 | 0 | 10 | 1 |
| 660 | 790 | 10 | 0 | 10 | 0 | 0 | 10 | 0 |
| 661 | 789 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 662 | 776 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 663 | 766 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 664 | 758 | 10 | 1 | 9 | 0 | 0 | 10 | 0 |
| 665 | 760 | 11 | 1 | 9 | 1 | 1 | 10 | 0 |
| 666 | 764 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 667 | 781 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 668 | 790 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 669 | 786 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 670 | 797 | 11 | 0 | 11 | 0 | 0 | 11 | 0 |
| 671 | 785 | 11 | 0 | 9 | 2 | 0 | 11 | 0 |
| 672 | 794 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 673 | 786 | 11 | 1 | 9 | 1 | 0 | 11 | 0 |
| 674 | 790 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 675 | 783 | 11 | 1 | 10 | 0 | 0 | 11 | 0 |
| 676 | 788 | 11 | 0 | 10 | 1 | 0 | 11 | 0 |

* A complete listing of all Partial Credit Model item analysis results are presented in Appendix C.

**Weighted Kappa**. Weighted Kappa was calculated for each item based on the first and second reads. This statistic produces an estimate of the reliability of the score classifications relative to what would be expected to occur by chance.

Weighted Kappa is an estimate of the reliability of the score classifications. That is, the Kappa statistic is a measure of reproducibility for categorical data. Guidelines for the evaluation of this statistic are:

- $k > .75$ denotes excellent reproducibility
- $0.4 \leq k \leq .75$ denotes good reproducibility
- $0 \leq k \leq 0.4$ denotes marginal reproducibility

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The results found in Table 5 show a high degree of consistency between the first and second reads. The Weighted Kappa statistics ranged from 0.48 to 0.98 which in all cases indicates good to excellent reproducibility.

Based on the scoring reliability analyses, there is strong evidence that the scoring of the constructed-response items was performed in a highly reliable manner.

## *Item Response Theory (IRT) Statistics*

As discussed above, the item mean is a statistic used to evaluate item difficulty. However, many different test forms are used during field testing and different samples of students are responding to these items. The average ability of the different samples of students varies and a direct comparison of item means across test forms may lead to inaccurate interpretations. Therefore, Item Response Theory (IRT) was also used to evaluate item difficulty.

Specifically, the Rasch Partial Credit Model (PCM) was used. With use of this model, the difficulty of items and the ability of people are placed on the same metric. Thus, the difficulty of an item and the ability of a person can be meaningfully compared across field test forms. Also, the use of this model provides greater flexibility in situations where different samples or test forms are used because the parameters generated are generally not considered sample dependent or test dependent. A description of this model, results of item calibration, and item fit evaluation are below.

The PCM provides an overall difficulty estimate for each item. Specifically for constructed response items when there are several points possible, individual estimates of difficulty for each of the possible score points are also calculated (i.e., step values). Each step value represents the difficulty of a student receiving a particular score point given that they have already received the prior score point. For example, if a 3-point item had step values of -1.0, 1.0, and 0.0, one could say that it is relatively easy to obtain a score of 1. However, it is much more difficult to obtain a 2 given the student has the ability to score a 1 because the difference in difficulty between a 1 and a 1 is much greater than the difference between a 0 and a 1. Also, the difference between a 2 and a 3 is not as great as the difference between a 1 and a 2. Thus, with this example, a small step is needed to go from a 0 to a 1, a large step is needed to move from a 1 to a 2, and a moderate step is needed to proceed from a 2 to a 3.

**Item calibration**. As discussed above, the use of Rasch item difficulty statistics provide an advantage over the use of classical item means because they can be compared across test forms. Different samples of students responded to the various test forms. Although the samples were selected to be similar with respect to student ability, there are differences. By equating the test forms (See Equating Procedure section below), the Rasch item difficulties account for those differences and these statistics can be compared across test forms.

Rasch item difficulty values generally range from -3.00 to +3.00. An item with a Rasch difficulty greater than +2.0 is considered very difficult and should be examined carefully. If the item is measuring an important concept that students are having difficulty with, then the

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item can be useful. However, if the item is measuring a trivial concept or is written in a confusing manner, then it may not be appropriate to use on an operational test form. Likewise, any item with a Rasch difficulty less than -2.0 is considered very easy and usually provides little information regarding student achievement. The vast majority of test items should range between -2.0 and +2.0. This range represents approximately two standard deviations around the average difficulty of 0. Thus, one would expect that, based on chance, roughly 5% of the items will fall outside of that range and therefore, these are items that should be closely examined for content.

Table 6 contains a summary of the Partial Credit Model item analysis for each of the field test forms. The first column lists the form numbers. The next two columns list the number of students who participated and the number of items on each field test form. The remaining columns are divided into two sections. The first section pertains to the Rasch item difficulties. Most of the items fell within the moderate -2.0 to +2.0 difficulty range.

**Item fit evaluation**. Table 6 also contains the INFIT statistics. The INFIT statistic is an indication of the consistency between students' responses to items versus the students' overall performance on the test. If students who did very well on the overall test consistently failed to answer several of the easier items correctly, the fit for those items would be considered poor. Likewise if students who did poorly on the total test consistently answered difficult items correctly, the fit statistic would also be considered poor. Other poor fitting items may be identified because of inconsistent response patterns by typical students found in the sample. Items with INFIT statistics that fall within the range of -0.70 to +1.30 are considered good fitting items. All of the INFIT statistics for the field test items fell within this range.

All of the individual IRT item statistics are provided in Appendix C. RID contains the Rasch item difficulty statistics. S1 – S6 contain the step values for the constructed response items. MAX contains the maximum number of points possible for each item. Finally, INFIT contains the INFIT statistic for each item.

## Section III: Equating Procedure

The 2007 field test administration for the New York State Regents Examination in Integrated Algebra consisted of 25 field test forms numbered 652–676 and one anchor form labelled 651. The field test forms contained eight multiple-choice and three constructed-response items. All students participating in the field test were administered one of the 26 test forms. The test forms were spiraled within the classroom so that the groups of students taking each form were equivalent. A complete listing of these field test forms is provided in Appendix A, containing the number of items, item type (e.g., multiple choice, constructed response), and the maximum points for each item. All tables and results are based on responses to items on forms 651–676.

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The field test forms were equated using the equivalent groups design. The design was accomplished using the following steps: The first step is to calibrate the items on all of the field test forms where all the item parameters were free to estimate (without constraint). Besides, the mean ability estimates for each field form were obtained in this first run of calibration.

Since the forms were spiraled, it can be assumed that the mean abilities of each group taking the individual test forms are equal. The second step is to determine a constant by subtracting the mean ability for a given field test form from the mean ability for anchor form (e.g., form 651). Therefore, using test form 651 as the anchor a constant was added to each of the item parameters on a given form derived from the first calibration, so that the resulting mean of the ability estimates for those students equaled that of the students taking form 651. This procedure was repeated until the mean abilities for each of the field test forms equaled the mean ability of the anchor form (Form 651). Table 7 shows the mean abilities and constants used for the equating.

**Table 7. Mean Abilities and Constants Used for the 2007 IA FT Equating**

| Form Number | Mean Ability | Constants |
|---|---|---|
| 651 | -0.57 | 0.00 |
| 652 | -0.54 | -0.03 |
| 653 | -0.67 | 0.10 |
| 654 | -0.59 | 0.02 |
| 655 | -0.60 | 0.03 |
| 656 | -0.55 | -0.02 |
| 657 | -0.45 | -0.12 |
| 658 | -0.01 | -0.56 |
| 659 | -0.56 | -0.01 |
| 660 | -0.57 | 0.00 |
| 661 | -0.45 | -0.12 |
| 662 | -0.94 | 0.37 |
| 663 | -0.08 | -0.49 |
| 664 | -0.32 | -0.25 |
| 665 | -0.58 | 0.01 |
| 666 | -0.20 | -0.37 |
| 667 | -0.14 | -0.43 |
| 668 | -0.30 | -0.27 |
| 669 | -0.39 | -0.18 |
| 670 | -0.51 | -0.06 |
| 671 | -0.98 | 0.41 |
| 672 | -0.07 | -0.50 |
| 673 | -0.48 | -0.09 |

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| Form Number | Mean Ability | Constants |
|---|---|---|
| 674 | -0.20 | -0.37 |
| 675 | -0.08 | -0.49 |
| 676 | -0.91 | 0.34 |

When the equating constants were added to the field test item parameters, the mean ability for all forms was -0.57. This is consistent with the equivalent groups equating design. Since the calibration and equating are conducted for the first year, the stability of the anchor items will be examined before being used as anchors in the next year equating process.

Finally, the equated item parameters for the field test items could then be compared across test forms since the equating process places all items on the same scale. In addition, when items are combined to form unique operational test forms, raw score to scale score tables can be generated based on these parameters. The following section contains a description of the development of the operational test forms and scoring tables.

Appendix A contains the complete description of the field test design by test form.

## Section IV: Scaling of Operational Test Forms

Operational test items are selected based on content coverage and statistical quality. The sets of items on each operational test conform to the coverage suggested by content experts. These expert judgments are based on the learning standards established by the New York State Education Department. With respect to statistical quality, classical and Rasch statistics are examined to determine how well items function. Also, items are selected such that they range in difficulty in order to measure students across ability levels. Appendix D contains the 2008 operational test maps with content information regarding each item included on the June 2008 and August 2008 operational test forms.

In order to limit wide fluctuations of raw scores that correspond to scale scores of 65 and 85 across administrations, the average Rasch item difficulty for the operational test is considered. For this examination, an average Rasch difficulty of approximately 0.083 is used as a target for each administration. In most cases, meeting this target will provide raw scores of similar magnitude to other forms. However, differences with these scores also occur due to the distribution of the Rasch item difficulty parameters.

Scoring tables display the relationship between raw scores on the operational test and assigned scale scores. Appendix E contains the scoring tables used for June 2008 and August

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2008 operational test forms. Four steps are taken in order to produce these tables and resulting conversion charts.

The first step is to develop a raw score (i.e., number of points on the test form) to theta (i.e., student ability) to scale score relationship for the baseline operational test form using field test PCM equated item difficulty parameters. In other words, this relationship specifies the student ability associated with the raw score on the form and the resulting scale score. The baseline form was determined by the New York State Education Department to be June 2008. The theta values associated with the 65 and 85 scale scores for this baseline form are used in the third step.

$$\mathbf{p(x) = m_4x^4 + m_3x^3 + m_2x^2 + m_1x + m_0}$$

The raw score of zero was assigned a scale score of zero and the maximum raw score was assigned a scale score of 100. The raw scores corresponding to the scale scores of 65 and 85 were also fixed. The polynomial relationship was then used to assign all scale scores to the remaining raw scores. The resulting values for $\mathbf{m_1 - m_4}$ are the transformation constants used to produce the final raw score to scale score table.

The second step is to develop a raw score to theta relationship for the new operational test form using the field test equated PCM item parameters. Again, the number of points on the test form (i.e., raw score) expected across student ability levels is based on the difficulty of the items on the form. Thus, given a particular student ability level (i.e., theta), if the points are more difficult to earn on the new test than the points on the June 2008 test, the number of points expected of this student on the new test will be less than the number of points expected of this student on the baseline form.

The third step is to use linear interpolation to determine the raw score to theta to scale score relationship for the new test. The theta values associated with scale scores of 65 and 85 on the baseline form are used along with the raw score to theta relationship developed in the previous step. In other words, the baseline 65 and 85 theta values are used as reference points and linear interpolation assigns the other scale scores.

Finally, a conversion chart is created based on the scoring table generated in the third step. Scale scores are rounded to the nearest whole number in all cases except for 0, 65, 85, and 100. A raw score of zero is assigned a scale score of zero. The maximum raw score is assigned a scale score of 100. With respect to 65 and 85 scale scores, the raw scores with scale scores of 65 or 85 after rounding are assigned those values.

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## References


Anscombe, Francis J. (1973) Graphs in statistical analysis. *American Statistician* 27: 17–21.

Cohen J. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. Psychological Bulletin 70: 213–20.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika* 16 (3): 297–334.

Masters G.N. (1982) A Rasch model for partial credit scoring. *Psychometrika* 47: 149–174.

P. E. Shrout & Joseph L. Fleiss (1979). "Intraclass Correlations: Uses in Assessing Rater Reliability." *Psychological Bulletin* 86 (2): 420–428.

Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of Item Response Theory*. Newbury Park, CA: Sage Press.


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# Appendix A—Field Test Design

| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **651–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **652–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **653–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 4 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **654–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **655–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **656–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **657–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **658–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **659–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 3 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **660–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **661–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **662–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 2 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **663–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **664–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **665–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 2 |
| | 11 | CR | 2 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **666–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 3 |
| | Total | na | |
| **667–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **668–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 2 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **669–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **670–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 3 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |
| **671–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 4 |
| | 10 | CR | 2 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **672–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **673–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 4 |
| | 11 | CR | 3 |
| | Total | na | |
| **674–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 4 |
| | 11 | CR | 3 |
| | Total | na | |

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| Form Number | Item Number | Item Type MC, CR, etc. | Maximum Points |
|---|---|---|---|
| **675–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 3 |
| | 11 | CR | 4 |
| | Total | na | |
| **676–07** | 1 | MC | 1 |
| | 2 | MC | 1 |
| | 3 | MC | 1 |
| | 4 | MC | 1 |
| | 5 | MC | 1 |
| | 6 | MC | 1 |
| | 7 | MC | 1 |
| | 8 | MC | 1 |
| | 9 | CR | 2 |
| | 10 | CR | 4 |
| | 11 | CR | 2 |
| | Total | na | |

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# Appendix B—Classical Item Analysis

| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 651 | MC | 1 | 790 | 0.60 | 0.02 | 0.00 | 0.26 | 0.18 | 0.44 | 0.10 | | | 0.44 | 0.35 |
| 2007 INTG MATH FT | 651 | MC | 2 | 790 | 0.60 | 0.01 | 0.00 | 0.37 | 0.13 | 0.32 | 0.17 | | | 0.32 | 0.32 |
| 2007 INTG MATH FT | 651 | MC | 3 | 790 | 0.60 | 0.00 | 0.00 | 0.38 | 0.05 | 0.03 | 0.54 | | | 0.54 | 0.45 |
| 2007 INTG MATH FT | 651 | MC | 4 | 790 | 0.60 | 0.02 | 0.00 | 0.36 | 0.25 | 0.21 | 0.16 | | | 0.36 | 0.26 |
| 2007 INTG MATH FT | 651 | MC | 5 | 790 | 0.60 | 0.02 | 0.00 | 0.20 | 0.23 | 0.33 | 0.23 | | | 0.23 | 0.33 |
| 2007 INTG MATH FT | 651 | MC | 6 | 790 | 0.60 | 0.01 | 0.00 | 0.17 | 0.22 | 0.24 | 0.36 | | | 0.36 | 0.36 |
| 2007 INTG MATH FT | 651 | MC | 7 | 790 | 0.60 | 0.01 | 0.00 | 0.08 | 0.31 | 0.15 | 0.45 | | | 0.31 | 0.31 |
| 2007 INTG MATH FT | 651 | MC | 8 | 790 | 0.60 | 0.01 | 0.00 | 0.11 | 0.57 | 0.11 | 0.20 | | | 0.57 | 0.47 |
| 2007 INTG MATH FT | 651 | CR | 9 | 790 | 0.60 | 0.14 | 0.37 | 0.24 | 0.26 | | | | | 0.76 | 0.58 |
| 2007 INTG MATH FT | 651 | CR | 10 | 790 | 0.60 | 0.16 | 0.44 | 0.31 | 0.03 | 0.06 | | | | 0.56 | 0.50 |
| 2007 INTG MATH FT | 651 | CR | 11 | 790 | 0.60 | 0.20 | 0.30 | 0.02 | 0.35 | 0.02 | 0.11 | | | 1.22 | 0.68 |
| 2007 INTG MATH FT | 652 | MC | 1 | 792 | 0.68 | 0.01 | 0.00 | 0.04 | 0.47 | 0.42 | 0.06 | | | 0.42 | 0.34 |
| 2007 INTG MATH FT | 652 | MC | 2 | 792 | 0.68 | 0.00 | 0.00 | 0.28 | 0.03 | 0.21 | 0.47 | | | 0.47 | 0.46 |
| 2007 INTG MATH FT | 652 | MC | 3 | 792 | 0.68 | 0.01 | 0.00 | 0.53 | 0.12 | 0.07 | 0.27 | | | 0.27 | 0.43 |
| 2007 INTG MATH FT | 652 | MC | 4 | 792 | 0.68 | 0.01 | 0.00 | 0.39 | 0.45 | 0.08 | 0.08 | | | 0.39 | 0.38 |
| 2007 INTG MATH FT | 652 | MC | 5 | 792 | 0.68 | 0.00 | 0.00 | 0.38 | 0.28 | 0.26 | 0.08 | | | 0.28 | 0.25 |
| 2007 INTG MATH FT | 652 | MC | 6 | 792 | 0.68 | 0.01 | 0.00 | 0.19 | 0.12 | 0.33 | 0.35 | | | 0.35 | 0.37 |
| 2007 INTG MATH FT | 652 | MC | 7 | 792 | 0.68 | 0.02 | 0.00 | 0.21 | 0.31 | 0.24 | 0.22 | | | 0.31 | 0.32 |
| 2007 INTG MATH FT | 652 | MC | 8 | 792 | 0.68 | 0.02 | 0.00 | 0.40 | 0.20 | 0.19 | 0.19 | | | 0.40 | 0.33 |
| 2007 INTG MATH FT | 652 | CR | 9 | 792 | 0.68 | 0.11 | 0.45 | 0.30 | 0.08 | 0.06 | | | | 0.63 | 0.62 |
| 2007 INTG MATH FT | 652 | CR | 10 | 792 | 0.68 | 0.09 | 0.18 | 0.07 | 0.07 | 0.18 | 0.41 | | | 2.37 | 0.75 |
| 2007 INTG MATH FT | 652 | CR | 11 | 792 | 0.68 | 0.14 | 0.15 | 0.30 | 0.41 | | | | | 1.11 | 0.66 |
| 2007 INTG MATH FT | 653 | MC | 1 | 796 | 0.50 | 0.01 | 0.00 | 0.43 | 0.22 | 0.18 | 0.16 | | | 0.16 | 0.17 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 653 | MC | 2 | 796 | 0.50 | 0.01 | 0.00 | 0.36 | 0.28 | 0.14 | 0.21 | | | 0.28 | 0.35 |
| 2007 INTG MATH FT | 653 | MC | 3 | 796 | 0.50 | 0.00 | 0.00 | 0.13 | 0.69 | 0.14 | 0.04 | | | 0.69 | 0.44 |
| 2007 INTG MATH FT | 653 | MC | 4 | 796 | 0.50 | 0.02 | 0.00 | 0.15 | 0.11 | 0.48 | 0.24 | | | 0.48 | 0.36 |
| 2007 INTG MATH FT | 653 | MC | 5 | 796 | 0.50 | 0.01 | 0.00 | 0.06 | 0.36 | 0.22 | 0.36 | | | 0.36 | 0.40 |
| 2007 INTG MATH FT | 653 | MC | 6 | 796 | 0.50 | 0.02 | 0.00 | 0.25 | 0.18 | 0.41 | 0.14 | | | 0.41 | 0.37 |
| 2007 INTG MATH FT | 653 | MC | 7 | 796 | 0.50 | 0.01 | 0.00 | 0.25 | 0.03 | 0.53 | 0.18 | | | 0.25 | 0.38 |
| 2007 INTG MATH FT | 653 | MC | 8 | 796 | 0.50 | 0.02 | 0.00 | 0.11 | 0.16 | 0.56 | 0.15 | | | 0.56 | 0.47 |
| 2007 INTG MATH FT | 653 | CR | 9 | 796 | 0.50 | 0.27 | 0.47 | 0.21 | 0.05 | | | | | 0.31 | 0.38 |
| 2007 INTG MATH FT | 653 | CR | 10 | 796 | 0.50 | | | | | | | | | | |
| 2007 INTG MATH FT | 653 | CR | 11 | 796 | 0.50 | 0.20 | 0.33 | 0.21 | 0.11 | 0.15 | | | | 0.88 | 0.65 |
| 2007 INTG MATH FT | 654 | MC | 1 | 784 | 0.58 | 0.00 | 0.00 | 0.12 | 0.10 | 0.31 | 0.47 | | | 0.47 | 0.40 |
| 2007 INTG MATH FT | 654 | MC | 2 | 784 | 0.58 | 0.00 | 0.00 | 0.84 | 0.10 | 0.04 | 0.02 | | | 0.84 | 0.45 |
| 2007 INTG MATH FT | 654 | MC | 3 | 784 | 0.58 | 0.00 | 0.00 | 0.04 | 0.43 | 0.34 | 0.19 | | | 0.34 | 0.35 |
| 2007 INTG MATH FT | 654 | MC | 4 | 784 | 0.58 | 0.00 | 0.00 | 0.11 | 0.10 | 0.18 | 0.60 | | | 0.60 | 0.38 |
| 2007 INTG MATH FT | 654 | MC | 5 | 784 | 0.58 | 0.03 | 0.00 | 0.23 | 0.21 | 0.25 | 0.28 | | | 0.23 | 0.27 |
| 2007 INTG MATH FT | 654 | MC | 6 | 784 | 0.58 | 0.01 | 0.00 | 0.16 | 0.54 | 0.19 | 0.10 | | | 0.54 | 0.44 |
| 2007 INTG MATH FT | 654 | MC | 7 | 784 | 0.58 | 0.00 | 0.00 | 0.66 | 0.25 | 0.06 | 0.03 | | | 0.25 | 0.20 |
| 2007 INTG MATH FT | 654 | MC | 8 | 784 | 0.58 | 0.04 | 0.00 | 0.24 | 0.11 | 0.26 | 0.35 | | | 0.35 | 0.43 |
| 2007 INTG MATH FT | 654 | CR | 9 | 784 | 0.58 | 0.17 | 0.60 | 0.13 | 0.10 | | | | | 0.32 | 0.52 |
| 2007 INTG MATH FT | 654 | CR | 10 | 784 | 0.58 | 0.16 | 0.63 | 0.15 | 0.03 | 0.02 | | | | 0.28 | 0.47 |
| 2007 INTG MATH FT | 654 | CR | 11 | 784 | 0.58 | 0.18 | 0.44 | 0.23 | 0.05 | 0.01 | 0.08 | | | 0.70 | 0.58 |
| 2007 INTG MATH FT | 655 | MC | 1 | 786 | 0.58 | 0.01 | 0.00 | 0.30 | 0.38 | 0.20 | 0.12 | | | 0.38 | 0.31 |
| 2007 INTG MATH FT | 655 | MC | 2 | 786 | 0.58 | 0.00 | 0.00 | 0.03 | 0.25 | 0.46 | 0.25 | | | 0.25 | 0.32 |
| 2007 INTG MATH FT | 655 | MC | 3 | 786 | 0.58 | 0.00 | 0.00 | 0.07 | 0.13 | 0.74 | 0.05 | | | 0.74 | 0.55 |
| 2007 INTG MATH FT | 655 | MC | 4 | 786 | 0.58 | 0.00 | 0.00 | 0.19 | 0.10 | 0.20 | 0.50 | | | 0.50 | 0.42 |
| 2007 INTG MATH FT | 655 | MC | 5 | 786 | 0.58 | 0.01 | 0.00 | 0.40 | 0.12 | 0.10 | 0.37 | | | 0.37 | 0.41 |
| 2007 INTG MATH FT | 655 | MC | 6 | 786 | 0.58 | 0.01 | 0.00 | 0.25 | 0.21 | 0.39 | 0.14 | | | 0.25 | 0.36 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 655 | MC | 7 | 786 | 0.58 | 0.01 | 0.00 | 0.14 | 0.49 | 0.17 | 0.18 | | | 0.49 | 0.31 |
| 2007 INTG MATH FT | 655 | MC | 8 | 786 | 0.58 | 0.03 | 0.00 | 0.22 | 0.33 | 0.30 | 0.12 | | | 0.33 | 0.26 |
| 2007 INTG MATH FT | 655 | CR | 9 | 786 | 0.58 | 0.15 | 0.64 | 0.08 | 0.03 | 0.01 | 0.10 | | | 0.55 | 0.54 |
| 2007 INTG MATH FT | 655 | CR | 10 | 786 | 0.58 | 0.16 | 0.37 | 0.31 | 0.08 | 0.03 | 0.06 | | | 0.79 | 0.58 |
| 2007 INTG MATH FT | 655 | CR | 11 | 786 | 0.58 | 0.14 | 0.51 | 0.25 | 0.10 | | | | | 0.46 | 0.45 |
| 2007 INTG MATH FT | 656 | MC | 1 | 765 | 0.62 | 0.01 | 0.00 | 0.18 | 0.09 | 0.65 | 0.07 | | | 0.65 | 0.53 |
| 2007 INTG MATH FT | 656 | MC | 2 | 765 | 0.62 | 0.00 | 0.00 | 0.05 | 0.40 | 0.24 | 0.32 | | | 0.32 | 0.40 |
| 2007 INTG MATH FT | 656 | MC | 3 | 765 | 0.62 | 0.00 | 0.00 | 0.48 | 0.10 | 0.38 | 0.04 | | | 0.38 | 0.41 |
| 2007 INTG MATH FT | 656 | MC | 4 | 765 | 0.62 | 0.03 | 0.00 | 0.19 | 0.39 | 0.23 | 0.16 | | | 0.39 | 0.34 |
| 2007 INTG MATH FT | 656 | MC | 5 | 765 | 0.62 | 0.01 | 0.00 | 0.27 | 0.19 | 0.50 | 0.03 | | | 0.50 | 0.40 |
| 2007 INTG MATH FT | 656 | MC | 6 | 765 | 0.62 | 0.02 | 0.00 | 0.17 | 0.35 | 0.25 | 0.20 | | | 0.35 | 0.34 |
| 2007 INTG MATH FT | 656 | MC | 7 | 765 | 0.62 | 0.01 | 0.00 | 0.18 | 0.46 | 0.16 | 0.19 | | | 0.46 | 0.33 |
| 2007 INTG MATH FT | 656 | MC | 8 | 765 | 0.62 | 0.04 | 0.00 | 0.21 | 0.28 | 0.19 | 0.27 | | | 0.27 | 0.30 |
| 2007 INTG MATH FT | 656 | CR | 9 | 765 | 0.62 | 0.09 | 0.15 | 0.10 | 0.66 | | | | | 1.43 | 0.64 |
| 2007 INTG MATH FT | 656 | CR | 10 | 765 | 0.62 | 0.05 | 0.41 | 0.45 | 0.08 | 0.01 | | | | 0.63 | 0.53 |
| 2007 INTG MATH FT | 656 | CR | 11 | 765 | 0.62 | 0.35 | 0.51 | 0.05 | 0.04 | 0.02 | 0.04 | | | 0.34 | 0.50 |
| 2007 INTG MATH FT | 657 | MC | 1 | 775 | 0.61 | 0.02 | 0.00 | 0.37 | 0.29 | 0.19 | 0.13 | | | 0.13 | 0.16 |
| 2007 INTG MATH FT | 657 | MC | 2 | 775 | 0.61 | 0.01 | 0.00 | 0.14 | 0.61 | 0.09 | 0.15 | | | 0.61 | 0.41 |
| 2007 INTG MATH FT | 657 | MC | 3 | 775 | 0.61 | 0.01 | 0.00 | 0.29 | 0.19 | 0.40 | 0.11 | | | 0.40 | 0.43 |
| 2007 INTG MATH FT | 657 | MC | 4 | 775 | 0.61 | 0.00 | 0.00 | 0.17 | 0.35 | 0.39 | 0.09 | | | 0.39 | 0.40 |
| 2007 INTG MATH FT | 657 | MC | 5 | 775 | 0.61 | 0.00 | 0.00 | 0.03 | 0.05 | 0.11 | 0.80 | | | 0.80 | 0.34 |
| 2007 INTG MATH FT | 657 | MC | 6 | 775 | 0.61 | 0.01 | 0.00 | 0.27 | 0.36 | 0.25 | 0.10 | | | 0.27 | 0.25 |
| 2007 INTG MATH FT | 657 | MC | 7 | 775 | 0.61 | 0.03 | 0.00 | 0.12 | 0.37 | 0.23 | 0.25 | | | 0.37 | 0.26 |
| 2007 INTG MATH FT | 657 | MC | 8 | 775 | 0.61 | 0.02 | 0.00 | 0.20 | 0.46 | 0.22 | 0.10 | | | 0.46 | 0.28 |
| 2007 INTG MATH FT | 657 | CR | 9 | 775 | 0.61 | 0.08 | 0.51 | 0.15 | 0.25 | | | | | 0.66 | 0.61 |
| 2007 INTG MATH FT | 657 | CR | 10 | 775 | 0.61 | 0.05 | 0.19 | 0.18 | 0.18 | 0.40 | | | | 1.74 | 0.68 |
| 2007 INTG MATH FT | 657 | CR | 11 | 775 | 0.61 | 0.04 | 0.58 | 0.19 | 0.16 | 0.01 | 0.02 | | | 0.60 | 0.54 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 658 | MC | 1 | 773 | 0.75 | 0.00 | 0.00 | 0.05 | 0.79 | 0.06 | 0.11 | | | 0.79 | 0.51 |
| 2007 INTG MATH FT | 658 | MC | 2 | 773 | 0.75 | 0.01 | 0.00 | 0.21 | 0.20 | 0.17 | 0.40 | | | 0.40 | 0.45 |
| 2007 INTG MATH FT | 658 | MC | 3 | 773 | 0.75 | 0.01 | 0.00 | 0.05 | 0.09 | 0.12 | 0.74 | | | 0.74 | 0.56 |
| 2007 INTG MATH FT | 658 | MC | 4 | 773 | 0.75 | 0.01 | 0.00 | 0.20 | 0.25 | 0.31 | 0.23 | | | 0.31 | 0.30 |
| 2007 INTG MATH FT | 658 | MC | 5 | 773 | 0.75 | 0.01 | 0.00 | 0.14 | 0.08 | 0.07 | 0.70 | | | 0.70 | 0.59 |
| 2007 INTG MATH FT | 658 | MC | 6 | 773 | 0.75 | 0.01 | 0.00 | 0.50 | 0.27 | 0.15 | 0.07 | | | 0.50 | 0.43 |
| 2007 INTG MATH FT | 658 | MC | 7 | 773 | 0.75 | 0.01 | 0.00 | 0.09 | 0.49 | 0.38 | 0.03 | | | 0.49 | 0.47 |
| 2007 INTG MATH FT | 658 | MC | 8 | 773 | 0.75 | 0.01 | 0.00 | 0.02 | 0.90 | 0.04 | 0.04 | | | 0.90 | 0.38 |
| 2007 INTG MATH FT | 658 | CR | 9 | 773 | 0.75 | 0.12 | 0.43 | 0.26 | 0.06 | 0.13 | | | | 0.77 | 0.65 |
| 2007 INTG MATH FT | 658 | CR | 10 | 773 | 0.75 | 0.23 | 0.37 | 0.21 | 0.08 | 0.07 | 0.04 | | | 0.74 | 0.60 |
| 2007 INTG MATH FT | 658 | CR | 11 | 773 | 0.75 | 0.26 | 0.61 | 0.10 | 0.03 | | | | | 0.17 | 0.46 |
| 2007 INTG MATH FT | 659 | MC | 1 | 794 | 0.61 | 0.03 | 0.00 | 0.50 | 0.14 | 0.24 | 0.09 | | | 0.50 | 0.54 |
| 2007 INTG MATH FT | 659 | MC | 2 | 794 | 0.61 | 0.01 | 0.00 | 0.23 | 0.24 | 0.23 | 0.30 | | | 0.30 | 0.35 |
| 2007 INTG MATH FT | 659 | MC | 3 | 794 | 0.61 | 0.01 | 0.00 | 0.15 | 0.15 | 0.54 | 0.15 | | | 0.54 | 0.46 |
| 2007 INTG MATH FT | 659 | MC | 4 | 794 | 0.61 | 0.00 | 0.00 | 0.09 | 0.16 | 0.60 | 0.14 | | | 0.14 | 0.27 |
| 2007 INTG MATH FT | 659 | MC | 5 | 794 | 0.61 | 0.01 | 0.00 | 0.15 | 0.18 | 0.21 | 0.46 | | | 0.46 | 0.45 |
| 2007 INTG MATH FT | 659 | MC | 6 | 794 | 0.61 | 0.01 | 0.00 | 0.18 | 0.48 | 0.24 | 0.09 | | | 0.48 | 0.44 |
| 2007 INTG MATH FT | 659 | MC | 7 | 794 | 0.61 | 0.01 | 0.00 | 0.15 | 0.18 | 0.11 | 0.55 | | | 0.55 | 0.47 |
| 2007 INTG MATH FT | 659 | MC | 8 | 794 | 0.61 | 0.03 | 0.00 | 0.41 | 0.27 | 0.21 | 0.09 | | | 0.41 | 0.38 |
| 2007 INTG MATH FT | 659 | CR | 9 | 794 | 0.61 | 0.16 | 0.63 | 0.03 | 0.05 | 0.03 | 0.10 | | | 0.63 | 0.47 |
| 2007 INTG MATH FT | 659 | CR | 10 | 794 | 0.61 | 0.18 | 0.51 | 0.11 | 0.10 | 0.11 | | | | 0.63 | 0.53 |
| 2007 INTG MATH FT | 659 | CR | 11 | 794 | 0.61 | 0.21 | 0.36 | 0.28 | 0.07 | 0.08 | | | | 0.65 | 0.59 |
| 2007 INTG MATH FT | 660 | MC | 1 | 790 | 0.57 | 0.01 | 0.00 | 0.17 | 0.15 | 0.43 | 0.24 | | | 0.43 | 0.46 |
| 2007 INTG MATH FT | 660 | MC | 2 | 790 | 0.57 | 0.01 | 0.00 | 0.26 | 0.32 | 0.24 | 0.17 | | | 0.26 | 0.38 |
| 2007 INTG MATH FT | 660 | MC | 3 | 790 | 0.57 | 0.01 | 0.00 | 0.28 | 0.11 | 0.06 | 0.54 | | | 0.54 | 0.43 |
| 2007 INTG MATH FT | 660 | MC | 4 | 790 | 0.57 | 0.01 | 0.00 | 0.15 | 0.36 | 0.35 | 0.14 | | | 0.36 | 0.40 |
| 2007 INTG MATH FT | 660 | MC | 5 | 790 | 0.57 | 0.01 | 0.00 | 0.74 | 0.14 | 0.08 | 0.03 | | | 0.74 | 0.52 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 660 | MC | 6 | 790 | 0.57 | 0.01 | 0.00 | 0.35 | 0.17 | 0.31 | 0.16 | | | 0.17 | 0.23 |
| 2007 INTG MATH FT | 660 | MC | 7 | 790 | 0.57 | 0.03 | 0.00 | 0.15 | 0.37 | 0.35 | 0.10 | | | 0.37 | 0.39 |
| 2007 INTG MATH FT | 660 | MC | 8 | 790 | 0.57 | 0.01 | 0.00 | 0.11 | 0.03 | 0.45 | 0.40 | | | 0.40 | 0.28 |
| 2007 INTG MATH FT | 660 | CR | 9 | 790 | 0.57 | 0.16 | 0.36 | 0.24 | 0.24 | | | | | 0.72 | 0.58 |
| 2007 INTG MATH FT | 660 | CR | 10 | 790 | 0.57 | | | | | | | | | | |
| 2007 INTG MATH FT | 660 | CR | 11 | 790 | 0.57 | 0.18 | 0.32 | 0.44 | 0.03 | 0.01 | 0.02 | | | 0.59 | 0.59 |
| 2007 INTG MATH FT | 661 | MC | 1 | 789 | 0.66 | 0.00 | 0.00 | 0.78 | 0.09 | 0.07 | 0.06 | | | 0.78 | 0.38 |
| 2007 INTG MATH FT | 661 | MC | 2 | 789 | 0.66 | 0.00 | 0.00 | 0.24 | 0.55 | 0.06 | 0.15 | | | 0.55 | 0.50 |
| 2007 INTG MATH FT | 661 | MC | 3 | 789 | 0.66 | 0.01 | 0.00 | 0.05 | 0.60 | 0.14 | 0.20 | | | 0.60 | 0.36 |
| 2007 INTG MATH FT | 661 | MC | 4 | 789 | 0.66 | 0.01 | 0.00 | 0.24 | 0.12 | 0.38 | 0.25 | | | 0.38 | 0.38 |
| 2007 INTG MATH FT | 661 | MC | 5 | 789 | 0.66 | 0.01 | 0.00 | 0.16 | 0.25 | 0.27 | 0.31 | | | 0.31 | 0.33 |
| 2007 INTG MATH FT | 661 | MC | 6 | 789 | 0.66 | 0.00 | 0.00 | 0.39 | 0.22 | 0.04 | 0.34 | | | 0.34 | 0.52 |
| 2007 INTG MATH FT | 661 | MC | 7 | 789 | 0.66 | 0.01 | 0.00 | 0.08 | 0.42 | 0.12 | 0.37 | | | 0.42 | 0.43 |
| 2007 INTG MATH FT | 661 | MC | 8 | 789 | 0.66 | 0.02 | 0.00 | 0.19 | 0.36 | 0.07 | 0.36 | | | 0.36 | 0.41 |
| 2007 INTG MATH FT | 661 | CR | 9 | 789 | 0.66 | 0.15 | 0.53 | 0.04 | 0.07 | 0.21 | | | | 0.80 | 0.66 |
| 2007 INTG MATH FT | 661 | CR | 10 | 789 | 0.66 | 0.08 | 0.58 | 0.12 | 0.15 | 0.05 | 0.02 | | | 0.64 | 0.60 |
| 2007 INTG MATH FT | 661 | CR | 11 | 789 | 0.66 | 0.12 | 0.55 | 0.21 | 0.11 | | | | | 0.44 | 0.52 |
| 2007 INTG MATH FT | 662 | MC | 1 | 776 | 0.60 | 0.00 | 0.00 | 0.21 | 0.02 | 0.03 | 0.73 | | | 0.73 | 0.49 |
| 2007 INTG MATH FT | 662 | MC | 2 | 776 | 0.60 | 0.00 | 0.00 | 0.11 | 0.38 | 0.45 | 0.06 | | | 0.38 | 0.36 |
| 2007 INTG MATH FT | 662 | MC | 3 | 776 | 0.60 | 0.01 | 0.00 | 0.22 | 0.28 | 0.40 | 0.09 | | | 0.40 | 0.39 |
| 2007 INTG MATH FT | 662 | MC | 4 | 776 | 0.60 | 0.00 | 0.00 | 0.06 | 0.04 | 0.17 | 0.73 | | | 0.73 | 0.49 |
| 2007 INTG MATH FT | 662 | MC | 5 | 776 | 0.60 | 0.00 | 0.00 | 0.59 | 0.32 | 0.04 | 0.05 | | | 0.32 | 0.38 |
| 2007 INTG MATH FT | 662 | MC | 6 | 776 | 0.60 | 0.01 | 0.00 | 0.09 | 0.76 | 0.07 | 0.07 | | | 0.09 | 0.06 |
| 2007 INTG MATH FT | 662 | MC | 7 | 776 | 0.60 | 0.02 | 0.00 | 0.26 | 0.23 | 0.34 | 0.15 | | | 0.15 | 0.19 |
| 2007 INTG MATH FT | 662 | MC | 8 | 776 | 0.60 | 0.01 | 0.00 | 0.69 | 0.11 | 0.07 | 0.13 | | | 0.11 | 0.11 |
| 2007 INTG MATH FT | 662 | CR | 9 | 776 | 0.60 | 0.05 | 0.17 | 0.20 | 0.24 | 0.19 | 0.15 | | | 1.84 | 0.72 |
| 2007 INTG MATH FT | 662 | CR | 10 | 776 | 0.60 | 0.12 | 0.71 | 0.15 | 0.02 | | | | | 0.19 | 0.38 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 662 | CR | 11 | 776 | 0.60 | 0.20 | 0.56 | 0.16 | 0.03 | 0.06 | | | | 0.39 | 0.46 |
| 2007 INTG MATH FT | 663 | MC | 1 | 766 | 0.63 | 0.00 | 0.00 | 0.02 | 0.05 | 0.89 | 0.03 | | | 0.89 | 0.35 |
| 2007 INTG MATH FT | 663 | MC | 2 | 766 | 0.63 | 0.01 | 0.00 | 0.11 | 0.23 | 0.53 | 0.12 | | | 0.53 | 0.38 |
| 2007 INTG MATH FT | 663 | MC | 3 | 766 | 0.63 | 0.02 | 0.00 | 0.11 | 0.23 | 0.17 | 0.46 | | | 0.46 | 0.26 |
| 2007 INTG MATH FT | 663 | MC | 4 | 766 | 0.63 | 0.01 | 0.00 | 0.67 | 0.11 | 0.17 | 0.03 | | | 0.67 | 0.54 |
| 2007 INTG MATH FT | 663 | MC | 5 | 766 | 0.63 | 0.02 | 0.00 | 0.14 | 0.34 | 0.41 | 0.10 | | | 0.41 | 0.21 |
| 2007 INTG MATH FT | 663 | MC | 6 | 766 | 0.63 | 0.01 | 0.00 | 0.16 | 0.08 | 0.47 | 0.28 | | | 0.47 | 0.39 |
| 2007 INTG MATH FT | 663 | MC | 7 | 766 | 0.63 | 0.02 | 0.00 | 0.22 | 0.50 | 0.12 | 0.14 | | | 0.50 | 0.39 |
| 2007 INTG MATH FT | 663 | MC | 8 | 766 | 0.63 | 0.04 | 0.00 | 0.27 | 0.33 | 0.22 | 0.14 | | | 0.27 | 0.38 |
| 2007 INTG MATH FT | 663 | CR | 9 | 766 | 0.63 | 0.07 | 0.17 | 0.30 | 0.47 | | | | | 1.23 | 0.57 |
| 2007 INTG MATH FT | 663 | CR | 10 | 766 | 0.63 | 0.14 | 0.51 | 0.25 | 0.06 | 0.04 | | | | 0.48 | 0.58 |
| 2007 INTG MATH FT | 663 | CR | 11 | 766 | 0.63 | 0.18 | 0.65 | 0.02 | 0.07 | 0.02 | 0.07 | | | 0.47 | 0.53 |
| 2007 INTG MATH FT | 664 | MC | 1 | 758 | 0.64 | 0.02 | 0.00 | 0.10 | 0.22 | 0.27 | 0.40 | | | 0.40 | 0.34 |
| 2007 INTG MATH FT | 664 | MC | 2 | 758 | 0.64 | 0.00 | 0.00 | 0.32 | 0.11 | 0.54 | 0.02 | | | 0.54 | 0.36 |
| 2007 INTG MATH FT | 664 | MC | 3 | 758 | 0.64 | 0.01 | 0.00 | 0.07 | 0.45 | 0.17 | 0.30 | | | 0.45 | 0.51 |
| 2007 INTG MATH FT | 664 | MC | 4 | 758 | 0.64 | 0.01 | 0.00 | 0.23 | 0.46 | 0.22 | 0.08 | | | 0.46 | 0.37 |
| 2007 INTG MATH FT | 664 | MC | 5 | 758 | 0.64 | 0.01 | 0.00 | 0.22 | 0.19 | 0.46 | 0.12 | | | 0.46 | 0.44 |
| 2007 INTG MATH FT | 664 | MC | 6 | 758 | 0.64 | 0.01 | 0.00 | 0.79 | 0.09 | 0.04 | 0.06 | | | 0.79 | 0.46 |
| 2007 INTG MATH FT | 664 | MC | 7 | 758 | 0.64 | 0.02 | 0.00 | 0.21 | 0.20 | 0.42 | 0.15 | | | 0.21 | 0.26 |
| 2007 INTG MATH FT | 664 | MC | 8 | 758 | 0.64 | 0.02 | 0.00 | 0.34 | 0.13 | 0.47 | 0.05 | | | 0.47 | 0.49 |
| 2007 INTG MATH FT | 664 | CR | 9 | 758 | 0.64 | | | | | | | | | | |
| 2007 INTG MATH FT | 664 | CR | 10 | 758 | 0.64 | 0.10 | 0.16 | 0.18 | 0.29 | 0.16 | 0.11 | | | 1.68 | 0.73 |
| 2007 INTG MATH FT | 664 | CR | 11 | 758 | 0.64 | 0.32 | 0.52 | 0.09 | 0.07 | | | | | 0.23 | 0.50 |
| 2007 INTG MATH FT | 665 | MC | 1 | 760 | 0.58 | 0.03 | 0.00 | 0.47 | 0.22 | 0.17 | 0.12 | | | 0.47 | 0.34 |
| 2007 INTG MATH FT | 665 | MC | 2 | 760 | 0.58 | 0.00 | 0.00 | 0.11 | 0.05 | 0.05 | 0.79 | | | 0.79 | 0.46 |
| 2007 INTG MATH FT | 665 | MC | 3 | 760 | 0.58 | 0.01 | 0.00 | 0.28 | 0.39 | 0.21 | 0.11 | | | 0.39 | 0.35 |
| 2007 INTG MATH FT | 665 | MC | 4 | 760 | 0.58 | 0.02 | 0.00 | 0.07 | 0.37 | 0.40 | 0.14 | | | 0.40 | 0.27 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 665 | MC | 5 | 760 | 0.58 | 0.00 | 0.00 | 0.04 | 0.32 | 0.49 | 0.15 | | | 0.49 | 0.49 |
| 2007 INTG MATH FT | 665 | MC | 6 | 760 | 0.58 | 0.01 | 0.00 | 0.05 | 0.07 | 0.78 | 0.09 | | | 0.07 | 0.08 |
| 2007 INTG MATH FT | 665 | MC | 7 | 760 | 0.58 | 0.03 | 0.00 | 0.13 | 0.28 | 0.36 | 0.21 | | | 0.36 | 0.27 |
| 2007 INTG MATH FT | 665 | MC | 8 | 760 | 0.58 | 0.04 | 0.00 | 0.15 | 0.24 | 0.25 | 0.32 | | | 0.32 | 0.37 |
| 2007 INTG MATH FT | 665 | CR | 9 | 760 | 0.58 | 0.11 | 0.63 | 0.04 | 0.07 | 0.04 | 0.10 | | | 0.72 | 0.63 |
| 2007 INTG MATH FT | 665 | CR | 10 | 760 | 0.58 | 0.19 | 0.55 | 0.16 | 0.10 | | | | | 0.36 | 0.48 |
| 2007 INTG MATH FT | 665 | CR | 11 | 760 | 0.58 | 0.16 | 0.14 | 0.43 | 0.26 | | | | | 0.96 | 0.55 |
| 2007 INTG MATH FT | 666 | MC | 1 | 764 | 0.70 | 0.01 | 0.00 | 0.45 | 0.43 | 0.03 | 0.08 | | | 0.45 | 0.38 |
| 2007 INTG MATH FT | 666 | MC | 2 | 764 | 0.70 | 0.01 | 0.00 | 0.09 | 0.47 | 0.37 | 0.07 | | | 0.47 | 0.33 |
| 2007 INTG MATH FT | 666 | MC | 3 | 764 | 0.70 | 0.02 | 0.00 | 0.15 | 0.37 | 0.21 | 0.26 | | | 0.26 | 0.38 |
| 2007 INTG MATH FT | 666 | MC | 4 | 764 | 0.70 | 0.01 | 0.00 | 0.28 | 0.13 | 0.45 | 0.13 | | | 0.45 | 0.38 |
| 2007 INTG MATH FT | 666 | MC | 5 | 764 | 0.70 | 0.01 | 0.00 | 0.05 | 0.20 | 0.11 | 0.63 | | | 0.63 | 0.52 |
| 2007 INTG MATH FT | 666 | MC | 6 | 764 | 0.70 | 0.00 | 0.00 | 0.07 | 0.83 | 0.07 | 0.02 | | | 0.83 | 0.48 |
| 2007 INTG MATH FT | 666 | MC | 7 | 764 | 0.70 | 0.02 | 0.00 | 0.40 | 0.19 | 0.23 | 0.16 | | | 0.40 | 0.34 |
| 2007 INTG MATH FT | 666 | MC | 8 | 764 | 0.70 | 0.02 | 0.00 | 0.54 | 0.14 | 0.27 | 0.03 | | | 0.54 | 0.50 |
| 2007 INTG MATH FT | 666 | CR | 9 | 764 | 0.70 | 0.11 | 0.50 | 0.11 | 0.27 | | | | | 0.66 | 0.58 |
| 2007 INTG MATH FT | 666 | CR | 10 | 764 | 0.70 | 0.17 | 0.66 | 0.09 | 0.07 | 0.01 | | | | 0.27 | 0.52 |
| 2007 INTG MATH FT | 666 | CR | 11 | 764 | 0.70 | 0.13 | 0.21 | 0.14 | 0.11 | 0.41 | | | | 1.58 | 0.66 |
| 2007 INTG MATH FT | 667 | MC | 1 | 781 | 0.65 | 0.00 | 0.00 | 0.71 | 0.07 | 0.09 | 0.12 | | | 0.71 | 0.45 |
| 2007 INTG MATH FT | 667 | MC | 2 | 781 | 0.65 | 0.00 | 0.00 | 0.09 | 0.06 | 0.75 | 0.10 | | | 0.75 | 0.42 |
| 2007 INTG MATH FT | 667 | MC | 3 | 781 | 0.65 | 0.00 | 0.00 | 0.14 | 0.57 | 0.04 | 0.25 | | | 0.57 | 0.39 |
| 2007 INTG MATH FT | 667 | MC | 4 | 781 | 0.65 | 0.01 | 0.00 | 0.60 | 0.10 | 0.20 | 0.09 | | | 0.60 | 0.35 |
| 2007 INTG MATH FT | 667 | MC | 5 | 781 | 0.65 | 0.01 | 0.00 | 0.07 | 0.29 | 0.20 | 0.43 | | | 0.43 | 0.43 |
| 2007 INTG MATH FT | 667 | MC | 6 | 781 | 0.65 | 0.01 | 0.00 | 0.40 | 0.18 | 0.22 | 0.19 | | | 0.40 | 0.44 |
| 2007 INTG MATH FT | 667 | MC | 7 | 781 | 0.65 | 0.02 | 0.00 | 0.27 | 0.49 | 0.15 | 0.08 | | | 0.49 | 0.39 |
| 2007 INTG MATH FT | 667 | MC | 8 | 781 | 0.65 | 0.04 | 0.00 | 0.17 | 0.16 | 0.50 | 0.14 | | | 0.50 | 0.42 |
| 2007 INTG MATH FT | 667 | CR | 9 | 781 | 0.65 | 0.11 | 0.30 | 0.26 | 0.13 | 0.20 | | | | 1.12 | 0.64 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 667 | CR | 10 | 781 | 0.65 | 0.23 | 0.68 | 0.02 | 0.05 | 0.00 | 0.02 | | | 0.20 | 0.41 |
| 2007 INTG MATH FT | 667 | CR | 11 | 781 | 0.65 | 0.21 | 0.59 | 0.06 | 0.15 | | | | | 0.35 | 0.51 |
| 2007 INTG MATH FT | 668 | MC | 1 | 790 | 0.69 | 0.00 | 0.00 | 0.95 | 0.02 | 0.02 | 0.02 | | | 0.95 | 0.28 |
| 2007 INTG MATH FT | 668 | MC | 2 | 790 | 0.69 | 0.00 | 0.00 | 0.27 | 0.21 | 0.32 | 0.19 | | | 0.27 | 0.38 |
| 2007 INTG MATH FT | 668 | MC | 3 | 790 | 0.69 | 0.01 | 0.00 | 0.06 | 0.25 | 0.58 | 0.10 | | | 0.58 | 0.36 |
| 2007 INTG MATH FT | 668 | MC | 4 | 790 | 0.69 | 0.02 | 0.00 | 0.14 | 0.30 | 0.19 | 0.35 | | | 0.35 | 0.41 |
| 2007 INTG MATH FT | 668 | MC | 5 | 790 | 0.69 | 0.00 | 0.00 | 0.07 | 0.35 | 0.14 | 0.44 | | | 0.35 | 0.43 |
| 2007 INTG MATH FT | 668 | MC | 6 | 790 | 0.69 | 0.01 | 0.00 | 0.20 | 0.47 | 0.24 | 0.08 | | | 0.47 | 0.42 |
| 2007 INTG MATH FT | 668 | MC | 7 | 790 | 0.69 | 0.02 | 0.00 | 0.13 | 0.31 | 0.33 | 0.22 | | | 0.22 | 0.22 |
| 2007 INTG MATH FT | 668 | MC | 8 | 790 | 0.69 | 0.04 | 0.00 | 0.38 | 0.22 | 0.22 | 0.14 | | | 0.38 | 0.36 |
| 2007 INTG MATH FT | 668 | CR | 9 | 790 | 0.69 | 0.12 | 0.61 | 0.05 | 0.07 | 0.03 | 0.11 | | | 0.74 | 0.62 |
| 2007 INTG MATH FT | 668 | CR | 10 | 790 | 0.69 | 0.14 | 0.13 | 0.28 | 0.45 | | | | | 1.18 | 0.65 |
| 2007 INTG MATH FT | 668 | CR | 11 | 790 | 0.69 | 0.14 | 0.34 | 0.31 | 0.17 | 0.05 | | | | 0.78 | 0.67 |
| 2007 INTG MATH FT | 669 | MC | 1 | 786 | 0.67 | 0.01 | 0.00 | 0.17 | 0.34 | 0.24 | 0.24 | | | 0.34 | 0.30 |
| 2007 INTG MATH FT | 669 | MC | 2 | 786 | 0.67 | 0.00 | 0.00 | 0.05 | 0.49 | 0.36 | 0.10 | | | 0.49 | 0.48 |
| 2007 INTG MATH FT | 669 | MC | 3 | 786 | 0.67 | 0.01 | 0.00 | 0.18 | 0.11 | 0.18 | 0.52 | | | 0.52 | 0.48 |
| 2007 INTG MATH FT | 669 | MC | 4 | 786 | 0.67 | 0.01 | 0.00 | 0.36 | 0.45 | 0.11 | 0.07 | | | 0.36 | 0.35 |
| 2007 INTG MATH FT | 669 | MC | 5 | 786 | 0.67 | 0.02 | 0.00 | 0.36 | 0.20 | 0.36 | 0.05 | | | 0.20 | 0.26 |
| 2007 INTG MATH FT | 669 | MC | 6 | 786 | 0.67 | 0.02 | 0.00 | 0.11 | 0.20 | 0.11 | 0.56 | | | 0.56 | 0.54 |
| 2007 INTG MATH FT | 669 | MC | 7 | 786 | 0.67 | 0.01 | 0.00 | 0.76 | 0.14 | 0.07 | 0.02 | | | 0.76 | 0.49 |
| 2007 INTG MATH FT | 669 | MC | 8 | 786 | 0.67 | 0.04 | 0.00 | 0.38 | 0.18 | 0.20 | 0.21 | | | 0.38 | 0.40 |
| 2007 INTG MATH FT | 669 | CR | 9 | 786 | 0.67 | 0.18 | 0.31 | 0.16 | 0.34 | | | | | 0.85 | 0.65 |
| 2007 INTG MATH FT | 669 | CR | 10 | 786 | 0.67 | 0.20 | 0.61 | 0.03 | 0.03 | 0.13 | | | | 0.48 | 0.49 |
| 2007 INTG MATH FT | 669 | CR | 11 | 786 | 0.67 | 0.16 | 0.32 | 0.19 | 0.18 | 0.05 | 0.09 | | | 1.09 | 0.66 |
| 2007 INTG MATH FT | 670 | MC | 1 | 797 | 0.67 | 0.01 | 0.00 | 0.13 | 0.55 | 0.14 | 0.18 | | | 0.55 | 0.37 |
| 2007 INTG MATH FT | 670 | MC | 2 | 797 | 0.67 | 0.01 | 0.00 | 0.11 | 0.57 | 0.13 | 0.18 | | | 0.57 | 0.53 |
| 2007 INTG MATH FT | 670 | MC | 3 | 797 | 0.67 | 0.01 | 0.00 | 0.19 | 0.26 | 0.35 | 0.20 | | | 0.35 | 0.36 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 670 | MC | 4 | 797 | 0.67 | 0.01 | 0.00 | 0.14 | 0.29 | 0.22 | 0.33 | | | 0.33 | 0.50 |
| 2007 INTG MATH FT | 670 | MC | 5 | 797 | 0.67 | 0.01 | 0.00 | 0.17 | 0.64 | 0.10 | 0.09 | | | 0.64 | 0.41 |
| 2007 INTG MATH FT | 670 | MC | 6 | 797 | 0.67 | 0.01 | 0.00 | 0.27 | 0.28 | 0.11 | 0.33 | | | 0.33 | 0.44 |
| 2007 INTG MATH FT | 670 | MC | 7 | 797 | 0.67 | 0.01 | 0.00 | 0.61 | 0.07 | 0.23 | 0.08 | | | 0.61 | 0.55 |
| 2007 INTG MATH FT | 670 | MC | 8 | 797 | 0.67 | 0.02 | 0.00 | 0.05 | 0.20 | 0.07 | 0.67 | | | 0.67 | 0.40 |
| 2007 INTG MATH FT | 670 | CR | 9 | 797 | 0.67 | 0.19 | 0.64 | 0.02 | 0.07 | 0.08 | | | | 0.39 | 0.56 |
| 2007 INTG MATH FT | 670 | CR | 10 | 797 | 0.67 | 0.06 | 0.50 | 0.27 | 0.15 | 0.02 | 0.01 | | | 0.65 | 0.58 |
| 2007 INTG MATH FT | 670 | CR | 11 | 797 | 0.67 | 0.15 | 0.71 | 0.09 | 0.04 | | | | | 0.18 | 0.46 |
| 2007 INTG MATH FT | 671 | MC | 1 | 785 | 0.62 | 0.00 | 0.00 | 0.12 | 0.39 | 0.13 | 0.36 | | | 0.36 | 0.36 |
| 2007 INTG MATH FT | 671 | MC | 2 | 785 | 0.62 | 0.00 | 0.00 | 0.29 | 0.50 | 0.10 | 0.11 | | | 0.50 | 0.52 |
| 2007 INTG MATH FT | 671 | MC | 3 | 785 | 0.62 | 0.01 | 0.00 | 0.46 | 0.12 | 0.15 | 0.25 | | | 0.46 | 0.52 |
| 2007 INTG MATH FT | 671 | MC | 4 | 785 | 0.62 | 0.00 | 0.00 | 0.04 | 0.23 | 0.11 | 0.61 | | | 0.61 | 0.53 |
| 2007 INTG MATH FT | 671 | MC | 5 | 785 | 0.62 | 0.01 | 0.00 | 0.13 | 0.18 | 0.62 | 0.06 | | | 0.62 | 0.46 |
| 2007 INTG MATH FT | 671 | MC | 6 | 785 | 0.62 | 0.00 | 0.00 | 0.19 | 0.10 | 0.13 | 0.57 | | | 0.57 | 0.56 |
| 2007 INTG MATH FT | 671 | MC | 7 | 785 | 0.62 | 0.00 | 0.00 | 0.68 | 0.14 | 0.13 | 0.05 | | | 0.05 | 0.09 |
| 2007 INTG MATH FT | 671 | MC | 8 | 785 | 0.62 | 0.01 | 0.00 | 0.31 | 0.09 | 0.38 | 0.21 | | | 0.31 | 0.39 |
| 2007 INTG MATH FT | 671 | CR | 9 | 785 | 0.62 | 0.10 | 0.66 | 0.07 | 0.11 | 0.02 | 0.04 | | | 0.50 | 0.58 |
| 2007 INTG MATH FT | 671 | CR | 10 | 785 | 0.62 | 0.19 | 0.62 | 0.18 | 0.00 | | | | | 0.19 | 0.43 |
| 2007 INTG MATH FT | 671 | CR | 11 | 785 | 0.62 | 0.19 | 0.70 | 0.06 | 0.02 | 0.03 | | | | 0.19 | 0.39 |
| 2007 INTG MATH FT | 672 | MC | 1 | 794 | 0.63 | 0.01 | 0.00 | 0.06 | 0.22 | 0.12 | 0.58 | | | 0.58 | 0.48 |
| 2007 INTG MATH FT | 672 | MC | 2 | 794 | 0.63 | 0.00 | 0.00 | 0.19 | 0.67 | 0.10 | 0.04 | | | 0.67 | 0.36 |
| 2007 INTG MATH FT | 672 | MC | 3 | 794 | 0.63 | 0.00 | 0.00 | 0.44 | 0.16 | 0.30 | 0.10 | | | 0.44 | 0.40 |
| 2007 INTG MATH FT | 672 | MC | 4 | 794 | 0.63 | 0.04 | 0.00 | 0.25 | 0.27 | 0.25 | 0.20 | | | 0.27 | 0.28 |
| 2007 INTG MATH FT | 672 | MC | 5 | 794 | 0.63 | 0.00 | 0.00 | 0.01 | 0.86 | 0.03 | 0.09 | | | 0.86 | 0.38 |
| 2007 INTG MATH FT | 672 | MC | 6 | 794 | 0.63 | 0.03 | 0.00 | 0.10 | 0.54 | 0.24 | 0.09 | | | 0.54 | 0.50 |
| 2007 INTG MATH FT | 672 | MC | 7 | 794 | 0.63 | 0.01 | 0.00 | 0.65 | 0.28 | 0.04 | 0.02 | | | 0.65 | 0.43 |
| 2007 INTG MATH FT | 672 | MC | 8 | 794 | 0.63 | 0.04 | 0.00 | 0.25 | 0.14 | 0.49 | 0.09 | | | 0.49 | 0.38 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 672 | CR | 9 | 794 | 0.63 | 0.17 | 0.35 | 0.20 | 0.28 | | | | | 0.76 | 0.55 |
| 2007 INTG MATH FT | 672 | CR | 10 | 794 | 0.63 | 0.15 | 0.68 | 0.02 | 0.08 | 0.08 | | | | 0.42 | 0.49 |
| 2007 INTG MATH FT | 672 | CR | 11 | 794 | 0.63 | 0.21 | 0.64 | 0.06 | 0.02 | 0.01 | 0.06 | | | 0.35 | 0.46 |
| 2007 INTG MATH FT | 673 | MC | 1 | 786 | 0.65 | 0.01 | 0.00 | 0.11 | 0.79 | 0.06 | 0.02 | | | 0.79 | 0.50 |
| 2007 INTG MATH FT | 673 | MC | 2 | 786 | 0.65 | 0.01 | 0.00 | 0.59 | 0.08 | 0.13 | 0.20 | | | 0.59 | 0.52 |
| 2007 INTG MATH FT | 673 | MC | 3 | 786 | 0.65 | 0.01 | 0.00 | 0.11 | 0.68 | 0.12 | 0.08 | | | 0.68 | 0.38 |
| 2007 INTG MATH FT | 673 | MC | 4 | 786 | 0.65 | 0.01 | 0.00 | 0.40 | 0.39 | 0.15 | 0.05 | | | 0.05 | 0.03 |
| 2007 INTG MATH FT | 673 | MC | 5 | 786 | 0.65 | 0.01 | 0.00 | 0.36 | 0.07 | 0.08 | 0.49 | | | 0.49 | 0.48 |
| 2007 INTG MATH FT | 673 | MC | 6 | 786 | 0.65 | 0.01 | 0.00 | 0.11 | 0.15 | 0.63 | 0.11 | | | 0.63 | 0.49 |
| 2007 INTG MATH FT | 673 | MC | 7 | 786 | 0.65 | 0.02 | 0.00 | 0.18 | 0.30 | 0.32 | 0.17 | | | 0.32 | 0.30 |
| 2007 INTG MATH FT | 673 | MC | 8 | 786 | 0.65 | 0.02 | 0.00 | 0.40 | 0.04 | 0.21 | 0.33 | | | 0.33 | 0.42 |
| 2007 INTG MATH FT | 673 | CR | 9 | 786 | 0.65 | 0.12 | 0.64 | 0.06 | 0.18 | | | | | 0.41 | 0.47 |
| 2007 INTG MATH FT | 673 | CR | 10 | 786 | 0.65 | 0.14 | 0.53 | 0.17 | 0.04 | 0.01 | 0.11 | | | 0.69 | 0.55 |
| 2007 INTG MATH FT | 673 | CR | 11 | 786 | 0.65 | 0.30 | 0.41 | 0.13 | 0.09 | 0.06 | | | | 0.51 | 0.52 |
| 2007 INTG MATH FT | 674 | MC | 1 | 790 | 0.69 | 0.00 | 0.00 | 0.07 | 0.10 | 0.81 | 0.02 | | | 0.81 | 0.38 |
| 2007 INTG MATH FT | 674 | MC | 2 | 790 | 0.69 | 0.01 | 0.00 | 0.13 | 0.26 | 0.08 | 0.52 | | | 0.52 | 0.54 |
| 2007 INTG MATH FT | 674 | MC | 3 | 790 | 0.69 | 0.01 | 0.00 | 0.12 | 0.38 | 0.06 | 0.43 | | | 0.38 | 0.43 |
| 2007 INTG MATH FT | 674 | MC | 4 | 790 | 0.69 | 0.01 | 0.00 | 0.15 | 0.15 | 0.30 | 0.39 | | | 0.39 | 0.38 |
| 2007 INTG MATH FT | 674 | MC | 5 | 790 | 0.69 | 0.01 | 0.00 | 0.23 | 0.42 | 0.15 | 0.19 | | | 0.42 | 0.22 |
| 2007 INTG MATH FT | 674 | MC | 6 | 790 | 0.69 | 0.01 | 0.00 | 0.16 | 0.42 | 0.24 | 0.17 | | | 0.42 | 0.45 |
| 2007 INTG MATH FT | 674 | MC | 7 | 790 | 0.69 | 0.01 | 0.00 | 0.06 | 0.12 | 0.10 | 0.71 | | | 0.71 | 0.51 |
| 2007 INTG MATH FT | 674 | MC | 8 | 790 | 0.69 | 0.01 | 0.00 | 0.15 | 0.26 | 0.10 | 0.48 | | | 0.48 | 0.48 |
| 2007 INTG MATH FT | 674 | CR | 9 | 790 | 0.69 | 0.22 | 0.60 | 0.10 | 0.08 | | | | | 0.25 | 0.46 |
| 2007 INTG MATH FT | 674 | CR | 10 | 790 | 0.69 | 0.16 | 0.48 | 0.21 | 0.05 | 0.01 | 0.09 | | | 0.70 | 0.59 |
| 2007 INTG MATH FT | 674 | CR | 11 | 790 | 0.69 | 0.13 | 0.36 | 0.09 | 0.16 | 0.26 | | | | 1.19 | 0.65 |
| 2007 INTG MATH FT | 675 | MC | 1 | 783 | 0.68 | 0.01 | 0.00 | 0.46 | 0.14 | 0.06 | 0.33 | | | 0.46 | 0.44 |
| 2007 INTG MATH FT | 675 | MC | 2 | 783 | 0.68 | 0.01 | 0.00 | 0.04 | 0.06 | 0.20 | 0.69 | | | 0.69 | 0.46 |

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| TEST | FORM | TYPE | ITEM | N-COUNT | ALPHA | B | M0 | M1 | M2 | M3 | M4 | M5 | M6 | MEAN | PBS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 675 | MC | 3 | 783 | 0.68 | 0.01 | 0.00 | 0.12 | 0.25 | 0.57 | 0.05 | | | 0.57 | 0.28 |
| 2007 INTG MATH FT | 675 | MC | 4 | 783 | 0.68 | 0.02 | 0.00 | 0.31 | 0.14 | 0.11 | 0.43 | | | 0.43 | 0.48 |
| 2007 INTG MATH FT | 675 | MC | 5 | 783 | 0.68 | 0.01 | 0.00 | 0.12 | 0.12 | 0.69 | 0.05 | | | 0.69 | 0.44 |
| 2007 INTG MATH FT | 675 | MC | 6 | 783 | 0.68 | 0.01 | 0.00 | 0.09 | 0.31 | 0.14 | 0.44 | | | 0.31 | 0.35 |
| 2007 INTG MATH FT | 675 | MC | 7 | 783 | 0.68 | 0.01 | 0.00 | 0.06 | 0.07 | 0.78 | 0.08 | | | 0.78 | 0.44 |
| 2007 INTG MATH FT | 675 | MC | 8 | 783 | 0.68 | 0.02 | 0.00 | 0.21 | 0.19 | 0.09 | 0.49 | | | 0.49 | 0.45 |
| 2007 INTG MATH FT | 675 | CR | 9 | 783 | 0.68 | 0.09 | 0.20 | 0.33 | 0.39 | | | | | 1.10 | 0.61 |
| 2007 INTG MATH FT | 675 | CR | 10 | 783 | 0.68 | 0.20 | 0.67 | 0.10 | 0.03 | 0.02 | | | | 0.20 | 0.36 |
| 2007 INTG MATH FT | 675 | CR | 11 | 783 | 0.68 | 0.14 | 0.65 | 0.02 | 0.02 | 0.04 | 0.12 | | | 0.69 | 0.60 |
| 2007 INTG MATH FT | 676 | MC | 1 | 788 | 0.52 | 0.01 | 0.00 | 0.29 | 0.46 | 0.13 | 0.11 | | | 0.46 | 0.42 |
| 2007 INTG MATH FT | 676 | MC | 2 | 788 | 0.52 | 0.01 | 0.00 | 0.14 | 0.17 | 0.24 | 0.44 | | | 0.44 | 0.38 |
| 2007 INTG MATH FT | 676 | MC | 3 | 788 | 0.52 | 0.02 | 0.00 | 0.28 | 0.13 | 0.40 | 0.17 | | | 0.40 | 0.32 |
| 2007 INTG MATH FT | 676 | MC | 4 | 788 | 0.52 | 0.00 | 0.00 | 0.54 | 0.18 | 0.06 | 0.21 | | | 0.18 | 0.37 |
| 2007 INTG MATH FT | 676 | MC | 5 | 788 | 0.52 | 0.01 | 0.00 | 0.02 | 0.64 | 0.05 | 0.28 | | | 0.28 | 0.45 |
| 2007 INTG MATH FT | 676 | MC | 6 | 788 | 0.52 | 0.01 | 0.00 | 0.13 | 0.24 | 0.51 | 0.11 | | | 0.51 | 0.45 |
| 2007 INTG MATH FT | 676 | MC | 7 | 788 | 0.52 | 0.01 | 0.00 | 0.37 | 0.30 | 0.22 | 0.10 | | | 0.37 | 0.42 |
| 2007 INTG MATH FT | 676 | MC | 8 | 788 | 0.52 | 0.02 | 0.00 | 0.16 | 0.43 | 0.28 | 0.10 | | | 0.43 | 0.41 |
| 2007 INTG MATH FT | 676 | CR | 9 | 788 | 0.52 | 0.25 | 0.72 | 0.01 | 0.01 | | | | | 0.04 | 0.31 |
| 2007 INTG MATH FT | 676 | CR | 10 | 788 | 0.52 | 0.20 | 0.58 | 0.12 | 0.06 | 0.04 | 0.01 | | | 0.40 | 0.56 |
| 2007 INTG MATH FT | 676 | CR | 11 | 788 | 0.52 | 0.15 | 0.39 | 0.28 | 0.18 | | | | | 0.64 | 0.52 |

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# Appendix C—Partial Credit Model Item Analysis

| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 651 | MC | 1 | -0.33 | | | | | | | 1 | 1.06 |
| 2007 INTG MATH FT | 651 | MC | 2 | 0.25 | | | | | | | 1 | 1.04 |
| 2007 INTG MATH FT | 651 | MC | 3 | -0.79 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 651 | MC | 4 | 0.04 | | | | | | | 1 | 1.14 |
| 2007 INTG MATH FT | 651 | MC | 5 | 0.76 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 651 | MC | 6 | 0.04 | | | | | | | 1 | 1.02 |
| 2007 INTG MATH FT | 651 | MC | 7 | 0.32 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 651 | MC | 8 | -0.94 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 651 | CR | 9 | -0.13 | 0.11 | -0.11 | | | | | 2 | 0.90 |
| 2007 INTG MATH FT | 651 | CR | 10 | 0.65 | -0.65 | 1.51 | -0.87 | | | | 3 | 1.03 |
| 2007 INTG MATH FT | 651 | CR | 11 | 0.13 | 2.29 | -3.54 | 2.63 | -1.38 | | | 4 | 0.87 |
| 2007 INTG MATH FT | 652 | MC | 1 | -0.21 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 652 | MC | 2 | -0.46 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 652 | MC | 3 | 0.56 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 652 | MC | 4 | -0.06 | | | | | | | 1 | 1.04 |
| 2007 INTG MATH FT | 652 | MC | 5 | 0.53 | | | | | | | 1 | 1.13 |
| 2007 INTG MATH FT | 652 | MC | 6 | 0.12 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 652 | MC | 7 | 0.32 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 652 | MC | 8 | -0.12 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 652 | CR | 9 | 0.70 | -0.78 | 0.64 | 0.14 | | | | 3 | 0.85 |
| 2007 INTG MATH FT | 652 | CR | 10 | -0.85 | 0.75 | 0.00 | -0.69 | -0.06 | | | 4 | 0.81 |
| 2007 INTG MATH FT | 652 | CR | 11 | -0.84 | -0.25 | 0.25 | | | | | 2 | 0.82 |
| 2007 INTG MATH FT | 653 | MC | 1 | 1.24 | | | | | | | 1 | 1.13 |
| 2007 INTG MATH FT | 653 | MC | 2 | 0.45 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 653 | MC | 3 | -1.42 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 653 | MC | 4 | -0.45 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 653 | MC | 5 | 0.09 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 653 | MC | 6 | -0.15 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 653 | MC | 7 | 0.64 | | | | | | | 1 | 0.97 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 653 | MC | 8 | -0.80 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 653 | CR | 9 | 1.15 | -0.45 | 0.45 | | | | | 2 | 1.07 |
| 2007 INTG MATH FT | 653 | CR | 10 | | | | | | | | | |
| 2007 INTG MATH FT | 653 | CR | 11 | 0.15 | -0.01 | 0.30 | -0.28 | | | | 3 | 0.83 |
| 2007 INTG MATH FT | 654 | MC | 1 | -0.42 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 654 | MC | 2 | -2.50 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 654 | MC | 3 | 0.24 | | | | | | | 1 | 1.04 |
| 2007 INTG MATH FT | 654 | MC | 4 | -1.05 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 654 | MC | 5 | 0.86 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 654 | MC | 6 | -0.74 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 654 | MC | 7 | 0.71 | | | | | | | 1 | 1.18 |
| 2007 INTG MATH FT | 654 | MC | 8 | 0.15 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 654 | CR | 9 | 0.95 | 0.38 | -0.38 | | | | | 2 | 0.83 |
| 2007 INTG MATH FT | 654 | CR | 10 | 1.38 | -0.16 | 0.59 | -0.43 | | | | 3 | 0.90 |
| 2007 INTG MATH FT | 654 | CR | 11 | 0.63 | -0.29 | 0.84 | 1.32 | -1.87 | | | 4 | 0.91 |
| 2007 INTG MATH FT | 655 | MC | 1 | 0.00 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 655 | MC | 2 | 0.65 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 655 | MC | 3 | -1.82 | | | | | | | 1 | 0.87 |
| 2007 INTG MATH FT | 655 | MC | 4 | -0.60 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 655 | MC | 5 | 0.01 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 655 | MC | 6 | 0.64 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 655 | MC | 7 | -0.54 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 655 | MC | 8 | 0.24 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 655 | CR | 9 | 0.57 | 1.22 | 0.39 | 0.53 | -2.14 | | | 4 | 0.82 |
| 2007 INTG MATH FT | 655 | CR | 10 | 0.52 | -0.72 | 0.62 | 0.88 | -0.77 | | | 4 | 0.94 |
| 2007 INTG MATH FT | 655 | CR | 11 | 0.65 | -0.29 | 0.29 | | | | | 2 | 1.03 |
| 2007 INTG MATH FT | 656 | MC | 1 | -1.28 | | | | | | | 1 | 0.89 |
| 2007 INTG MATH FT | 656 | MC | 2 | 0.33 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 656 | MC | 3 | 0.00 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 656 | MC | 4 | -0.07 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 656 | MC | 5 | -0.58 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 656 | MC | 6 | 0.16 | | | | | | | 1 | 1.06 |
| 2007 INTG MATH FT | 656 | MC | 7 | -0.37 | | | | | | | 1 | 1.10 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 656 | MC | 8 | 0.56 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 656 | CR | 9 | -1.37 | 0.97 | -0.97 | | | | | 2 | 0.83 |
| 2007 INTG MATH FT | 656 | CR | 10 | 1.34 | -2.08 | 0.46 | 1.62 | | | | 3 | 0.95 |
| 2007 INTG MATH FT | 656 | CR | 11 | 1.07 | 1.40 | -0.70 | 0.07 | -0.77 | | | 4 | 0.82 |
| 2007 INTG MATH FT | 657 | MC | 1 | 1.53 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 657 | MC | 2 | -1.07 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 657 | MC | 3 | -0.10 | | | | | | | 1 | 0.95 |
| 2007 INTG MATH FT | 657 | MC | 4 | -0.06 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 657 | MC | 5 | -2.09 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 657 | MC | 6 | 0.55 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 657 | MC | 7 | 0.06 | | | | | | | 1 | 1.11 |
| 2007 INTG MATH FT | 657 | MC | 8 | -0.37 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 657 | CR | 9 | 0.04 | 0.68 | -0.68 | | | | | 2 | 0.83 |
| 2007 INTG MATH FT | 657 | CR | 10 | -0.83 | 0.01 | 0.20 | -0.20 | | | | 3 | 0.86 |
| 2007 INTG MATH FT | 657 | CR | 11 | 1.01 | -0.49 | -0.93 | 2.39 | -0.97 | | | 4 | 0.98 |
| 2007 INTG MATH FT | 658 | MC | 1 | -2.20 | | | | | | | 1 | 0.95 |
| 2007 INTG MATH FT | 658 | MC | 2 | 0.00 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 658 | MC | 3 | -1.86 | | | | | | | 1 | 0.90 |
| 2007 INTG MATH FT | 658 | MC | 4 | 0.52 | | | | | | | 1 | 1.22 |
| 2007 INTG MATH FT | 658 | MC | 5 | -1.64 | | | | | | | 1 | 0.87 |
| 2007 INTG MATH FT | 658 | MC | 6 | -0.49 | | | | | | | 1 | 1.11 |
| 2007 INTG MATH FT | 658 | MC | 7 | -0.47 | | | | | | | 1 | 1.04 |
| 2007 INTG MATH FT | 658 | MC | 8 | -3.28 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 658 | CR | 9 | 0.57 | -0.50 | 1.07 | -0.58 | | | | 3 | 0.89 |
| 2007 INTG MATH FT | 658 | CR | 10 | 1.05 | -0.65 | 0.04 | -0.11 | 0.71 | | | 4 | 1.09 |
| 2007 INTG MATH FT | 658 | CR | 11 | 1.97 | 0.05 | -0.05 | | | | | 2 | 0.84 |
| 2007 INTG MATH FT | 659 | MC | 1 | -0.65 | | | | | | | 1 | 0.90 |
| 2007 INTG MATH FT | 659 | MC | 2 | 0.38 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 659 | MC | 3 | -0.81 | | | | | | | 1 | 1.02 |
| 2007 INTG MATH FT | 659 | MC | 4 | 1.40 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 659 | MC | 5 | -0.42 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 659 | MC | 6 | -0.55 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 659 | MC | 7 | -0.86 | | | | | | | 1 | 1.00 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 659 | MC | 8 | -0.20 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 659 | CR | 9 | 0.56 | 2.29 | -1.22 | 0.11 | -1.19 | | | 4 | 1.31 |
| 2007 INTG MATH FT | 659 | CR | 10 | 0.50 | 0.69 | -0.48 | -0.21 | | | | 3 | 1.00 |
| 2007 INTG MATH FT | 659 | CR | 11 | 0.55 | -0.54 | 0.74 | -0.19 | | | | 3 | 0.81 |
| 2007 INTG MATH FT | 660 | MC | 1 | -0.24 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 660 | MC | 2 | 0.61 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 660 | MC | 3 | -0.74 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 660 | MC | 4 | 0.09 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 660 | MC | 5 | -1.80 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 660 | MC | 6 | 1.11 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 660 | MC | 7 | 0.03 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 660 | MC | 8 | -0.11 | | | | | | | 1 | 1.17 |
| 2007 INTG MATH FT | 660 | CR | 9 | -0.02 | 0.02 | -0.02 | | | | | 2 | 0.93 |
| 2007 INTG MATH FT | 660 | CR | 10 | | | | | | | | | |
| 2007 INTG MATH FT | 660 | CR | 11 | 1.06 | -1.71 | 1.56 | 0.36 | -0.21 | | | 4 | 0.87 |
| 2007 INTG MATH FT | 661 | MC | 1 | -2.10 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 661 | MC | 2 | -0.81 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 661 | MC | 3 | -1.09 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 661 | MC | 4 | 0.03 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 661 | MC | 5 | 0.39 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 661 | MC | 6 | 0.21 | | | | | | | 1 | 0.87 |
| 2007 INTG MATH FT | 661 | MC | 7 | -0.19 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 661 | MC | 8 | 0.12 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 661 | CR | 9 | 0.25 | 1.80 | -0.79 | -1.02 | | | | 3 | 0.81 |
| 2007 INTG MATH FT | 661 | CR | 10 | 1.22 | -0.24 | -1.46 | 0.43 | 1.26 | | | 4 | 1.02 |
| 2007 INTG MATH FT | 661 | CR | 11 | 0.75 | -0.16 | 0.16 | | | | | 2 | 0.98 |
| 2007 INTG MATH FT | 662 | MC | 1 | -1.78 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 662 | MC | 2 | 0.01 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 662 | MC | 3 | -0.12 | | | | | | | 1 | 1.02 |
| 2007 INTG MATH FT | 662 | MC | 4 | -1.78 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 662 | MC | 5 | 0.28 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 662 | MC | 6 | 1.93 | | | | | | | 1 | 1.15 |
| 2007 INTG MATH FT | 662 | MC | 7 | 1.34 | | | | | | | 1 | 1.08 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 662 | MC | 8 | 1.71 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 662 | CR | 9 | -0.40 | -0.79 | -0.48 | 0.42 | 0.85 | | | 4 | 0.85 |
| 2007 INTG MATH FT | 662 | CR | 10 | 1.77 | -0.50 | 0.50 | | | | | 2 | 0.93 |
| 2007 INTG MATH FT | 662 | CR | 11 | 0.88 | 0.17 | 0.91 | -1.08 | | | | 3 | 0.90 |
| 2007 INTG MATH FT | 663 | MC | 1 | -2.91 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 663 | MC | 2 | -0.66 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 663 | MC | 3 | -0.35 | | | | | | | 1 | 1.15 |
| 2007 INTG MATH FT | 663 | MC | 4 | -1.37 | | | | | | | 1 | 0.85 |
| 2007 INTG MATH FT | 663 | MC | 5 | -0.13 | | | | | | | 1 | 1.19 |
| 2007 INTG MATH FT | 663 | MC | 6 | -0.42 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 663 | MC | 7 | -0.56 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 663 | MC | 8 | 0.57 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 663 | CR | 9 | -1.02 | -0.22 | 0.22 | | | | | 2 | 0.97 |
| 2007 INTG MATH FT | 663 | CR | 10 | 0.99 | -0.62 | 0.50 | 0.11 | | | | 3 | 0.88 |
| 2007 INTG MATH FT | 663 | CR | 11 | 0.79 | 2.59 | -2.14 | 1.06 | -1.52 | | | 4 | 0.85 |
| 2007 INTG MATH FT | 664 | MC | 1 | -0.05 | | | | | | | 1 | 1.11 |
| 2007 INTG MATH FT | 664 | MC | 2 | -0.73 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 664 | MC | 3 | -0.32 | | | | | | | 1 | 0.91 |
| 2007 INTG MATH FT | 664 | MC | 4 | -0.36 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 664 | MC | 5 | -0.34 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 664 | MC | 6 | -2.05 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 664 | MC | 7 | 0.94 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 664 | MC | 8 | -0.38 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 664 | CR | 9 | | | | | | | | | |
| 2007 INTG MATH FT | 664 | CR | 10 | -0.15 | -0.75 | -0.99 | 0.65 | 1.08 | | | 4 | 0.90 |
| 2007 INTG MATH FT | 664 | CR | 11 | 1.24 | 0.51 | -0.51 | | | | | 2 | 0.83 |
| 2007 INTG MATH FT | 665 | MC | 1 | -0.41 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 665 | MC | 2 | -2.02 | | | | | | | 1 | 0.95 |
| 2007 INTG MATH FT | 665 | MC | 3 | -0.05 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 665 | MC | 4 | -0.11 | | | | | | | 1 | 1.14 |
| 2007 INTG MATH FT | 665 | MC | 5 | -0.50 | | | | | | | 1 | 0.90 |
| 2007 INTG MATH FT | 665 | MC | 6 | 2.14 | | | | | | | 1 | 1.11 |
| 2007 INTG MATH FT | 665 | MC | 7 | 0.08 | | | | | | | 1 | 1.11 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 665 | MC | 8 | 0.25 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 665 | CR | 9 | 0.45 | 1.72 | -1.08 | 0.12 | -0.76 | | | 4 | 0.68 |
| 2007 INTG MATH FT | 665 | CR | 10 | 0.76 | 0.24 | -0.24 | | | | | 2 | 0.95 |
| 2007 INTG MATH FT | 665 | CR | 11 | -0.47 | -0.77 | 0.77 | | | | | 2 | 0.96 |
| 2007 INTG MATH FT | 666 | MC | 1 | -0.32 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 666 | MC | 2 | -0.41 | | | | | | | 1 | 1.13 |
| 2007 INTG MATH FT | 666 | MC | 3 | 0.61 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 666 | MC | 4 | -0.31 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 666 | MC | 5 | -1.17 | | | | | | | 1 | 0.89 |
| 2007 INTG MATH FT | 666 | MC | 6 | -2.38 | | | | | | | 1 | 0.92 |
| 2007 INTG MATH FT | 666 | MC | 7 | -0.11 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 666 | MC | 8 | -0.74 | | | | | | | 1 | 0.92 |
| 2007 INTG MATH FT | 666 | CR | 9 | 0.05 | 0.98 | -0.98 | | | | | 2 | 0.92 |
| 2007 INTG MATH FT | 666 | CR | 10 | 1.74 | -0.12 | -1.19 | 1.31 | | | | 3 | 0.94 |
| 2007 INTG MATH FT | 666 | CR | 11 | -0.63 | 0.41 | 0.29 | -0.70 | | | | 3 | 0.96 |
| 2007 INTG MATH FT | 667 | MC | 1 | -1.59 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 667 | MC | 2 | -1.81 | | | | | | | 1 | 1.00 |
| 2007 INTG MATH FT | 667 | MC | 3 | -0.86 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 667 | MC | 4 | -1.03 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 667 | MC | 5 | -0.21 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 667 | MC | 6 | -0.07 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 667 | MC | 7 | -0.50 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 667 | MC | 8 | -0.52 | | | | | | | 1 | 1.02 |
| 2007 INTG MATH FT | 667 | CR | 9 | -0.07 | -0.38 | 0.50 | -0.13 | | | | 3 | 0.98 |
| 2007 INTG MATH FT | 667 | CR | 10 | 1.40 | 2.36 | -2.22 | 2.22 | -2.35 | | | 4 | 0.89 |
| 2007 INTG MATH FT | 667 | CR | 11 | 0.75 | 1.44 | -1.44 | | | | | 2 | 0.88 |
| 2007 INTG MATH FT | 668 | MC | 1 | -3.94 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 668 | MC | 2 | 0.63 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 668 | MC | 3 | -0.91 | | | | | | | 1 | 1.13 |
| 2007 INTG MATH FT | 668 | MC | 4 | 0.21 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 668 | MC | 5 | 0.22 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 668 | MC | 6 | -0.41 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 668 | MC | 7 | 0.93 | | | | | | | 1 | 1.20 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 668 | MC | 8 | 0.05 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 668 | CR | 9 | 0.60 | 1.45 | -0.98 | 0.76 | -1.24 | | | 4 | 0.84 |
| 2007 INTG MATH FT | 668 | CR | 10 | -0.91 | -0.20 | 0.20 | | | | | 2 | 0.87 |
| 2007 INTG MATH FT | 668 | CR | 11 | 0.72 | -1.05 | -0.12 | 1.17 | | | | 3 | 0.81 |
| 2007 INTG MATH FT | 669 | MC | 1 | 0.21 | | | | | | | 1 | 1.14 |
| 2007 INTG MATH FT | 669 | MC | 2 | -0.50 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 669 | MC | 3 | -0.65 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 669 | MC | 4 | 0.14 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 669 | MC | 5 | 1.03 | | | | | | | 1 | 1.09 |
| 2007 INTG MATH FT | 669 | MC | 6 | -0.87 | | | | | | | 1 | 0.90 |
| 2007 INTG MATH FT | 669 | MC | 7 | -2.00 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 669 | MC | 8 | 0.03 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 669 | CR | 9 | -0.26 | 0.55 | -0.55 | | | | | 2 | 0.85 |
| 2007 INTG MATH FT | 669 | CR | 10 | 0.66 | 2.08 | -0.52 | -1.57 | | | | 3 | 1.12 |
| 2007 INTG MATH FT | 669 | CR | 11 | 0.33 | -0.26 | -0.55 | 1.13 | -0.32 | | | 4 | 0.90 |
| 2007 INTG MATH FT | 670 | MC | 1 | -0.81 | | | | | | | 1 | 1.15 |
| 2007 INTG MATH FT | 670 | MC | 2 | -0.92 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 670 | MC | 3 | 0.20 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 670 | MC | 4 | 0.29 | | | | | | | 1 | 0.91 |
| 2007 INTG MATH FT | 670 | MC | 5 | -1.28 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 670 | MC | 6 | 0.30 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 670 | MC | 7 | -1.14 | | | | | | | 1 | 0.90 |
| 2007 INTG MATH FT | 670 | MC | 8 | -1.47 | | | | | | | 1 | 1.10 |
| 2007 INTG MATH FT | 670 | CR | 9 | 0.99 | 2.21 | -1.84 | -0.38 | | | | 3 | 0.84 |
| 2007 INTG MATH FT | 670 | CR | 10 | 1.59 | -1.62 | -0.94 | 1.15 | 1.41 | | | 4 | 1.06 |
| 2007 INTG MATH FT | 670 | CR | 11 | 1.68 | 0.24 | -0.24 | | | | | 2 | 0.90 |
| 2007 INTG MATH FT | 671 | MC | 1 | 0.07 | | | | | | | 1 | 1.13 |
| 2007 INTG MATH FT | 671 | MC | 2 | -0.61 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 671 | MC | 3 | -0.45 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 671 | MC | 4 | -1.23 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 671 | MC | 5 | -1.24 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 671 | MC | 6 | -0.99 | | | | | | | 1 | 0.91 |
| 2007 INTG MATH FT | 671 | MC | 7 | 2.85 | | | | | | | 1 | 1.07 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 671 | MC | 8 | 0.35 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 671 | CR | 9 | 1.08 | 0.73 | -1.36 | 1.56 | -0.93 | | | 4 | 0.83 |
| 2007 INTG MATH FT | 671 | CR | 10 | 2.86 | -1.76 | 1.76 | | | | | 2 | 0.94 |
| 2007 INTG MATH FT | 671 | CR | 11 | 1.59 | 0.77 | -0.13 | -0.64 | | | | 3 | 1.13 |
| 2007 INTG MATH FT | 672 | MC | 1 | -0.92 | | | | | | | 1 | 0.95 |
| 2007 INTG MATH FT | 672 | MC | 2 | -1.37 | | | | | | | 1 | 1.08 |
| 2007 INTG MATH FT | 672 | MC | 3 | -0.23 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 672 | MC | 4 | 0.64 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 672 | MC | 5 | -2.61 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 672 | MC | 6 | -0.70 | | | | | | | 1 | 0.92 |
| 2007 INTG MATH FT | 672 | MC | 7 | -1.24 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 672 | MC | 8 | -0.48 | | | | | | | 1 | 1.06 |
| 2007 INTG MATH FT | 672 | CR | 9 | -0.05 | 0.32 | -0.32 | | | | | 2 | 1.00 |
| 2007 INTG MATH FT | 672 | CR | 10 | 0.83 | 2.65 | -2.23 | -0.42 | | | | 3 | 1.02 |
| 2007 INTG MATH FT | 672 | CR | 11 | 0.96 | 1.24 | 0.51 | 0.59 | -2.34 | | | 4 | 0.81 |
| 2007 INTG MATH FT | 673 | MC | 1 | -2.21 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 673 | MC | 2 | -1.00 | | | | | | | 1 | 0.92 |
| 2007 INTG MATH FT | 673 | MC | 3 | -1.47 | | | | | | | 1 | 1.11 |
| 2007 INTG MATH FT | 673 | MC | 4 | 2.69 | | | | | | | 1 | 1.07 |
| 2007 INTG MATH FT | 673 | MC | 5 | -0.51 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 673 | MC | 6 | -1.20 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 673 | MC | 7 | 0.32 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 673 | MC | 8 | 0.28 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 673 | CR | 9 | 0.62 | 1.43 | -1.43 | | | | | 2 | 1.04 |
| 2007 INTG MATH FT | 673 | CR | 10 | 0.61 | 0.18 | 0.93 | 1.86 | -2.97 | | | 4 | 0.87 |
| 2007 INTG MATH FT | 673 | CR | 11 | 0.86 | 0.31 | -0.35 | 0.04 | | | | 3 | 0.95 |
| 2007 INTG MATH FT | 674 | MC | 1 | -2.32 | | | | | | | 1 | 1.03 |
| 2007 INTG MATH FT | 674 | MC | 2 | -0.64 | | | | | | | 1 | 0.88 |
| 2007 INTG MATH FT | 674 | MC | 3 | 0.01 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 674 | MC | 4 | -0.05 | | | | | | | 1 | 1.06 |
| 2007 INTG MATH FT | 674 | MC | 5 | -0.17 | | | | | | | 1 | 1.27 |
| 2007 INTG MATH FT | 674 | MC | 6 | -0.20 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 674 | MC | 7 | -1.67 | | | | | | | 1 | 0.92 |

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| TEST | FORM | TYPE | ITEM | RID | S1 | S2 | S3 | S4 | S5 | S6 | MAX | INFIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 INTG MATH FT | 674 | MC | 8 | -0.48 | | | | | | | 1 | 0.95 |
| 2007 INTG MATH FT | 674 | CR | 9 | 1.18 | 0.50 | -0.50 | | | | | 2 | 0.92 |
| 2007 INTG MATH FT | 674 | CR | 10 | 0.63 | -0.15 | 0.72 | 1.44 | -2.01 | | | 4 | 0.90 |
| 2007 INTG MATH FT | 674 | CR | 11 | -0.15 | 0.89 | -0.71 | -0.19 | | | | 3 | 1.05 |
| 2007 INTG MATH FT | 675 | MC | 1 | -0.36 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 675 | MC | 2 | -1.52 | | | | | | | 1 | 0.96 |
| 2007 INTG MATH FT | 675 | MC | 3 | -0.85 | | | | | | | 1 | 1.21 |
| 2007 INTG MATH FT | 675 | MC | 4 | -0.20 | | | | | | | 1 | 0.94 |
| 2007 INTG MATH FT | 675 | MC | 5 | -1.51 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 675 | MC | 6 | 0.39 | | | | | | | 1 | 1.05 |
| 2007 INTG MATH FT | 675 | MC | 7 | -2.04 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 675 | MC | 8 | -0.50 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 675 | CR | 9 | -0.76 | -0.41 | 0.41 | | | | | 2 | 0.93 |
| 2007 INTG MATH FT | 675 | CR | 10 | 1.70 | 0.14 | 0.05 | -0.18 | | | | 3 | 1.14 |
| 2007 INTG MATH FT | 675 | CR | 11 | 0.59 | 2.40 | -0.53 | -0.92 | -0.95 | | | 4 | 0.76 |
| 2007 INTG MATH FT | 676 | MC | 1 | -0.44 | | | | | | | 1 | 1.01 |
| 2007 INTG MATH FT | 676 | MC | 2 | -0.33 | | | | | | | 1 | 1.06 |
| 2007 INTG MATH FT | 676 | MC | 3 | -0.14 | | | | | | | 1 | 1.12 |
| 2007 INTG MATH FT | 676 | MC | 4 | 1.09 | | | | | | | 1 | 0.97 |
| 2007 INTG MATH FT | 676 | MC | 5 | 0.46 | | | | | | | 1 | 0.93 |
| 2007 INTG MATH FT | 676 | MC | 6 | -0.66 | | | | | | | 1 | 0.98 |
| 2007 INTG MATH FT | 676 | MC | 7 | 0.01 | | | | | | | 1 | 0.99 |
| 2007 INTG MATH FT | 676 | MC | 8 | -0.27 | | | | | | | 1 | 1.02 |
| 2007 INTG MATH FT | 676 | CR | 9 | 2.27 | 1.66 | -1.66 | | | | | 2 | 0.86 |
| 2007 INTG MATH FT | 676 | CR | 10 | 1.29 | -0.07 | -0.60 | -0.23 | 0.90 | | | 4 | 0.93 |
| 2007 INTG MATH FT | 676 | CR | 11 | 0.14 | -0.28 | 0.28 | | | | | 2 | 1.05 |

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# Appendix D—Operational Test Maps

## Integrated Algebra Examination
## June 2008

| Position | Item Type | Max Points | Weight | Strand | Item Mean | PBS | Rasch | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Multiple Choice | 1 | 2 | Geometry | 0.78 | 0.38 | -2.10 | | | | |
| 2 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.80 | 0.34 | -2.09 | | | | |
| 3 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.79 | 0.46 | -2.05 | | | | |
| 4 | Multiple Choice | 1 | 2 | Algebra | 0.74 | 0.52 | -1.80 | | | | |
| 5 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.71 | 0.51 | -1.67 | | | | |
| 6 | Multiple Choice | 1 | 2 | Algebra | 0.64 | 0.41 | -1.28 | | | | |
| 7 | Multiple Choice | 1 | 2 | Algebra | 0.59 | 0.52 | -1.00 | | | | |
| 8 | Multiple Choice | 1 | 2 | Number Sense and Operations | 0.54 | 0.36 | -0.73 | | | | |
| 9 | Multiple Choice | 1 | 2 | Geometry | 0.48 | 0.44 | -0.55 | | | | |
| 10 | Multiple Choice | 1 | 2 | Algebra | 0.49 | 0.45 | -0.50 | | | | |
| 11 | Multiple Choice | 1 | 2 | Geometry | 0.50 | 0.43 | -0.49 | | | | |
| 12 | Multiple Choice | 1 | 2 | Algebra | 0.49 | 0.38 | -0.48 | | | | |
| 13 | Multiple Choice | 1 | 2 | Algebra | 0.47 | 0.46 | -0.46 | | | | |
| 14 | Multiple Choice | 1 | 2 | Algebra | 0.46 | 0.44 | -0.36 | | | | |
| 15 | Multiple Choice | 1 | 2 | Algebra | 0.46 | 0.26 | -0.35 | | | | |
| 16 | Multiple Choice | 1 | 2 | Algebra | 0.43 | 0.41 | -0.27 | | | | |
| 17 | Multiple Choice | 1 | 2 | Algebra | 0.43 | 0.46 | -0.24 | | | | |
| 18 | Multiple Choice | 1 | 2 | Algebra | 0.42 | 0.22 | -0.17 | | | | |
| 19 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.40 | 0.32 | -0.14 | | | | |
| 20 | Multiple Choice | 1 | 2 | Algebra | 0.40 | 0.43 | -0.10 | | | | |
| 21 | Multiple Choice | 1 | 2 | Algebra | 0.38 | 0.31 | 0.00 | | | | |
| 22 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.38 | 0.41 | 0.00 | | | | |
| 23 | Multiple Choice | 1 | 2 | Algebra | 0.32 | 0.40 | 0.33 | | | | |

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| Position | Item Type | Max Points | Weight | Strand | Item Mean | PBS | Rasch | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | Multiple Choice | 1 | 2 | Algebra | 0.31 | 0.35 | 0.39 | | | | |
| 25 | Multiple Choice | 1 | 2 | Algebra | 0.31 | 0.30 | 0.52 | | | | |
| 26 | Multiple Choice | 1 | 2 | Algebra | 0.27 | 0.30 | 0.56 | | | | |
| 27 | Multiple Choice | 1 | 2 | Geometry | 0.27 | 0.43 | 0.56 | | | | |
| 28 | Multiple Choice | 1 | 2 | Number Sense and Operations | 0.27 | 0.38 | 0.63 | | | | |
| 29 | Multiple Choice | 1 | 2 | Geometry | 0.15 | 0.19 | 1.34 | | | | |
| 30 | Multiple Choice | 1 | 2 | Algebra | 0.11 | 0.11 | 1.71 | | | | |
| 31 | Constructed Response | 2 | 1 | Measurement | 0.64 | 0.52 | 0.14 | -0.28141 | 0.28141 | | |
| 32 | Constructed Response | 2 | 1 | Geometry | 0.23 | 0.50 | 1.24 | 0.50981 | -0.50981 | | |
| 33 | Constructed Response | 2 | 1 | Algebra | 0.04 | 0.31 | 2.27 | 1.65766 | -1.6577 | | |
| 34 | Constructed Response | 3 | 1 | Algebra | 0.63 | 0.62 | 0.70 | -0.78393 | 0.63998 | 0.14395 | |
| 35 | Constructed Response | 3 | 1 | Number Sense and Operations | 0.48 | 0.58 | 0.99 | -0.61737 | 0.50263 | 0.11474 | |
| 36 | Constructed Response | 3 | 1 | Geometry | 0.63 | 0.53 | 0.50 | 0.69024 | -0.48263 | -0.2076 | |
| 37 | Constructed Response | 4 | 1 | Algebra | 0.50 | 0.58 | 1.08 | 0.73316 | -1.3644 | 1.56159 | -0.93033 |
| 38 | Constructed Response | 4 | 1 | Measurement | 0.59 | 0.59 | 1.06 | -1.7066 | 1.56053 | 0.35657 | -0.21048 |
| 39 | Constructed Response | 4 | 1 | Statistics and Probability | 0.65 | 0.58 | 1.59 | -1.6192 | -0.94121 | 1.14737 | 1.41307 |

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## Integrated Algebra Examination
## August 2008

| Position | Item Type | Max Points | Weight | Strand | Item Mean | PBS | Rasch | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Multiple Choice | 1 | 2 | Algebra | 0.74 | 0.56 | -1.86 | | | | |
| 2 | Multiple Choice | 1 | 2 | Number Sense and Operations | 0.69 | 0.44 | -1.42 | | | | |
| 3 | Multiple Choice | 1 | 2 | Algebra | 0.61 | 0.55 | -1.14 | | | | |
| 4 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.63 | 0.49 | -1.20 | | | | |
| 5 | Multiple Choice | 1 | 2 | Algebra | 0.54 | 0.43 | -0.74 | | | | |
| 6 | Multiple Choice | 1 | 2 | Algebra | 0.54 | 0.44 | -0.74 | | | | |
| 7 | Multiple Choice | 1 | 2 | Geometry | 0.57 | 0.39 | -0.86 | | | | |
| 8 | Multiple Choice | 1 | 2 | Algebra | 0.54 | 0.46 | -0.81 | | | | |
| 9 | Multiple Choice | 1 | 2 | Algebra | 0.52 | 0.54 | -0.64 | | | | |
| 10 | Multiple Choice | 1 | 2 | Algebra | 0.50 | 0.52 | -0.61 | | | | |
| 11 | Multiple Choice | 1 | 2 | Algebra | 0.49 | 0.48 | -0.50 | | | | |
| 12 | Multiple Choice | 1 | 2 | Algebra | 0.46 | 0.28 | -0.37 | | | | |
| 13 | Multiple Choice | 1 | 2 | Geometry | 0.46 | 0.52 | -0.45 | | | | |
| 14 | Multiple Choice | 1 | 2 | Measurement | 0.47 | 0.49 | -0.38 | | | | |
| 15 | Multiple Choice | 1 | 2 | Geometry | 0.46 | 0.37 | -0.36 | | | | |
| 16 | Multiple Choice | 1 | 2 | Algebra | 0.57 | 0.53 | -0.92 | | | | |
| 17 | Multiple Choice | 1 | 2 | Number Sense and Operations | 0.45 | 0.38 | -0.32 | | | | |
| 18 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.42 | 0.34 | -0.21 | | | | |
| 19 | Multiple Choice | 1 | 2 | Algebra | 0.39 | 0.40 | -0.06 | | | | |
| 20 | Multiple Choice | 1 | 2 | Algebra | 0.35 | 0.43 | 0.15 | | | | |
| 21 | Multiple Choice | 1 | 2 | Algebra | 0.39 | 0.38 | -0.05 | | | | |
| 22 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.35 | 0.41 | 0.21 | | | | |
| 23 | Multiple Choice | 1 | 2 | Algebra | 0.34 | 0.30 | 0.21 | | | | |
| 24 | Multiple Choice | 1 | 2 | Algebra | 0.44 | 0.40 | -0.23 | | | | |
| 25 | Multiple Choice | 1 | 2 | Algebra | 0.31 | 0.33 | 0.39 | | | | |
| 26 | Multiple Choice | 1 | 2 | Algebra | 0.21 | 0.26 | 0.94 | | | | |

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| Position | Item Type | Max Points | Weight | Strand | Item Mean | PBS | Rasch | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Multiple Choice | 1 | 2 | Algebra | 0.30 | 0.35 | 0.38 | | | | |
| 28 | Multiple Choice | 1 | 2 | Measurement | 0.23 | 0.27 | 0.86 | | | | |
| 29 | Multiple Choice | 1 | 2 | Algebra | 0.32 | 0.30 | 0.32 | | | | |
| 30 | Multiple Choice | 1 | 2 | Statistics and Probability | 0.17 | 0.23 | 1.11 | | | | |
| 31 | Constructed Response | 2 | 1 | Measurement | 0.76 | 0.55 | -0.05 | 0.32004 | -0.32004 | | |
| 32 | Constructed Response | 2 | 1 | Statistics and Probability | 0.35 | 0.51 | 0.75 | 1.44169 | -1.4417 | | |
| 33 | Constructed Response | 2 | 1 | Algebra | 0.31 | 0.38 | 1.15 | -0.44844 | 0.44844 | | |
| 34 | Constructed Response | 3 | 1 | Number Sense and Operations | 0.19 | 0.39 | 1.59 | 0.76861 | -0.12834 | -0.64027 | |
| 35 | Constructed Response | 3 | 1 | Geometry | 0.20 | 0.36 | 1.70 | 0.13546 | 0.04821 | -0.18366 | |
| 36 | Constructed Response | 3 | 1 | Algebra | 0.39 | 0.46 | 0.88 | 0.16908 | 0.90756 | -1.0766 | |
| 37 | Constructed Response | 4 | 1 | Algebra | 0.70 | 0.58 | 0.63 | -0.29352 | 0.8423 | 1.32151 | -1.8703 |
| 38 | Constructed Response | 4 | 1 | Statistics and Probability | 1.84 | 0.72 | -0.40 | -0.79432 | -0.47747 | 0.41744 | 0.85435 |
| 39 | Constructed Response | 4 | 1 | Geometry | 0.79 | 0.58 | 0.52 | -0.72415 | 0.6184 | 0.87968 | -0.77392 |

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# Appendix E—Scoring Tables

## Scoring Tables for June 2008

| RS | Ability | SS | RS | Ability | SS | RS | Ability | SS |
|---|---|---|---|---|---|---|---|---|
| 0 | -5.598 | 0.0 | 30 | -0.606 | 65.0 | 60 | 1.000 | 83.1 |
| 1 | -4.873 | 3.4 | 31 | -0.546 | 66.1 | 61 | 1.056 | 83.5 |
| 2 | -4.148 | 6.8 | 32 | -0.487 | 67.1 | 62 | 1.112 | 83.8 |
| 3 | -3.710 | 10.0 | 33 | -0.430 | 68.1 | 63 | 1.170 | 84.2 |
| 4 | -3.390 | 13.1 | 34 | -0.373 | 69.0 | 64 | 1.228 | 84.4 |
| 5 | -3.134 | 16.2 | 35 | -0.317 | 69.9 | 65 | 1.288 | 85.0 |
| 6 | -2.920 | 19.1 | 36 | -0.262 | 70.8 | 66 | 1.348 | 85.5 |
| 7 | -2.734 | 22.0 | 37 | -0.207 | 71.6 | 67 | 1.411 | 85.8 |
| 8 | -2.568 | 24.7 | 38 | -0.153 | 72.4 | 68 | 1.475 | 86.3 |
| 9 | -2.419 | 27.4 | 39 | -0.100 | 73.1 | 69 | 1.542 | 86.7 |
| 10 | -2.282 | 29.9 | 40 | -0.047 | 73.8 | 70 | 1.611 | 87.2 |
| 11 | -2.156 | 32.4 | 41 | 0.006 | 74.5 | 71 | 1.683 | 87.7 |
| 12 | -2.038 | 34.8 | 42 | 0.058 | 75.1 | 72 | 1.759 | 88.2 |
| 13 | -1.927 | 37.1 | 43 | 0.110 | 75.7 | 73 | 1.838 | 88.8 |
| 14 | -1.822 | 39.3 | 44 | 0.162 | 76.3 | 74 | 1.923 | 89.3 |
| 15 | -1.723 | 41.4 | 45 | 0.213 | 76.8 | 75 | 2.013 | 89.9 |
| 16 | -1.629 | 43.5 | 46 | 0.265 | 77.3 | 76 | 2.110 | 90.6 |
| 17 | -1.538 | 45.5 | 47 | 0.316 | 77.8 | 77 | 2.215 | 91.2 |
| 18 | -1.452 | 47.4 | 48 | 0.368 | 78.3 | 78 | 2.330 | 91.9 |
| 19 | -1.368 | 49.2 | 49 | 0.419 | 78.8 | 79 | 2.458 | 92.7 |
| 20 | -1.288 | 51.0 | 50 | 0.471 | 79.2 | 80 | 2.602 | 93.4 |
| 21 | -1.211 | 52.7 | 51 | 0.522 | 79.7 | 81 | 2.766 | 94.2 |
| 22 | -1.136 | 54.3 | 52 | 0.574 | 80.1 | 82 | 2.958 | 95.1 |
| 23 | -1.063 | 55.8 | 53 | 0.626 | 80.5 | 83 | 3.192 | 96.0 |
| 24 | -0.993 | 57.3 | 54 | 0.679 | 80.9 | 84 | 3.489 | 96.9 |
| 25 | -0.924 | 58.8 | 55 | 0.731 | 81.2 | 85 | 3.905 | 97.9 |
| 26 | -0.857 | 60.1 | 56 | 0.784 | 81.6 | 86 | 4.608 | 98.9 |
| 27 | -0.792 | 61.4 | 57 | 0.837 | 82.0 | 87 | 5.311 | 100.0 |
| 28 | -0.729 | 62.7 | 58 | 0.891 | 82.4 | | | |
| 29 | -0.667 | 63.9 | 59 | 0.946 | 82.7 | | | |

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## Scoring Tables for August 2008

| RS | Ability | SS | RS | Ability | SS | RS | Ability | SS |
|---|---|---|---|---|---|---|---|---|
| 0 | -5.3920 | 0.966 | 30 | -0.6130 | 64.874 | 60 | 0.9300 | 82.613 |
| 1 | -4.6770 | 4.319 | 31 | -0.5550 | 65.935 | 61 | 0.9790 | 82.944 |
| 2 | -3.9620 | 8.159 | 32 | -0.4970 | 66.931 | 62 | 1.0290 | 83.307 |
| 3 | -3.5350 | 11.695 | 33 | -0.4400 | 67.925 | 63 | 1.0810 | 83.634 |
| 4 | -3.2260 | 15.086 | 34 | -0.3840 | 68.826 | 64 | 1.1330 | 83.945 |
| 5 | -2.9810 | 18.273 | 35 | -0.3280 | 69.723 | 65 | 1.1860 | 84.255 |
| 6 | -2.7770 | 21.330 | 36 | -0.2730 | 70.620 | 66 | 1.2410 | 84.530 |
| 7 | -2.6010 | 24.163 | 37 | -0.2180 | 71.440 | 67 | 1.2970 | 85.075 |
| 8 | -2.4460 | 26.911 | 38 | -0.1640 | 72.237 | 68 | 1.3550 | 85.533 |
| 9 | -2.3070 | 29.444 | 39 | -0.1110 | 72.955 | 69 | 1.4150 | 85.831 |
| 10 | -2.1790 | 31.944 | 40 | -0.0580 | 73.655 | 70 | 1.4770 | 86.312 |
| 11 | -2.0620 | 34.312 | 41 | -0.0050 | 74.355 | 71 | 1.5430 | 86.707 |
| 12 | -1.9530 | 36.561 | 42 | 0.0470 | 74.973 | 72 | 1.6110 | 87.200 |
| 13 | -1.8510 | 38.692 | 43 | 0.0980 | 75.562 | 73 | 1.6830 | 87.700 |
| 14 | -1.7550 | 40.721 | 44 | 0.1490 | 76.150 | 74 | 1.7590 | 88.200 |
| 15 | -1.6630 | 42.740 | 45 | 0.2000 | 76.673 | 75 | 1.8390 | 88.806 |
| 16 | -1.5760 | 44.665 | 46 | 0.2500 | 77.156 | 76 | 1.9260 | 89.320 |
| 17 | -1.4930 | 46.494 | 47 | 0.3000 | 77.643 | 77 | 2.0200 | 89.951 |
| 18 | -1.4130 | 48.236 | 48 | 0.3500 | 78.127 | 78 | 2.1230 | 90.674 |
| 19 | -1.3360 | 49.920 | 49 | 0.3990 | 78.604 | 79 | 2.2370 | 91.334 |
| 20 | -1.2620 | 51.574 | 50 | 0.4480 | 79.023 | 80 | 2.3670 | 92.131 |
| 21 | -1.1900 | 53.148 | 51 | 0.4960 | 79.445 | 81 | 2.5150 | 92.977 |
| 22 | -1.1200 | 54.629 | 52 | 0.5440 | 79.869 | 82 | 2.6920 | 93.839 |
| 23 | -1.0510 | 56.057 | 53 | 0.5920 | 80.238 | 83 | 2.9080 | 94.866 |
| 24 | -0.9850 | 57.474 | 54 | 0.6400 | 80.606 | 84 | 3.1900 | 95.992 |
| 25 | -0.9200 | 58.878 | 55 | 0.6880 | 80.952 | 85 | 3.5910 | 97.145 |
| 26 | -0.8560 | 60.120 | 56 | 0.7360 | 81.238 | 86 | 4.2800 | 98.433 |
| 27 | -0.7940 | 61.360 | 57 | 0.7840 | 81.600 | 87 | 4.9690 | 99.465 |
| 28 | -0.7330 | 62.617 | 58 | 0.8320 | 81.962 | | | |
| 29 | -0.6720 | 63.803 | 59 | 0.8810 | 82.326 | | | |

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