

**New York State Regents Examination in
Algebra II/Trigonometry**

**2010 Field Test Analysis,
Equating Procedure, and Scaling of
Operational Test Forms**

Technical Report



Prepared for the New York State Education Department
by Pearson

August 2011

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Section I: Introduction

Purpose

The purpose of this report is to document the psychometric work on the New York State Regents Examination in Algebra II/Trigonometry in 2010. Specifically, contained within this report are procedures for and results of field test analysis, equating, and scaling of operational test forms. Because of a change in vendor mid-year, the field test equating was conducted by Pearson while the scaling was conducted by the previous vendor. Information on test development can be found in the test design and development report for the New York State Regents Examination in Algebra II/Trigonometry.

Section II: Field Test Analysis

In May 2010, field testing was conducted for the New York State Regents Examination in Algebra II/Trigonometry to better understand the psychometric quality of the items. The results of this testing are used to help determine which items will be 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 (N/RC) 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

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-response items were scored by Measurement Incorporated. 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 22,388 student records and the constructed-response data file contained 22,097 student records. To combine the two files, the multiple-choice file served as the base file and constructed-response records were merged to the multiple-choice records using unique test booklet numbers. For multiple-choice records that did not have corresponding constructed-response records, constructed-response items were treated as non-attempted and scored as 0. After the exclusion rules were applied, the resulting field test data file contained 21,294 records.

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, scores from 0 to the maximum point value available for each tested item were kept while out of range values were assigned scores of 0. For IRT calibrations, 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 were used to calculate the percentage of students who selected the various answer choices for the multiple-choice items or the percentage of students who received the range of possible raw score points for the constructed-response items. Thus, the frequency of students leaving items blank can be calculated. The scored data were 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 making a student's observed score higher or lower than the

student's true score. The error is considered random. 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:

$$E(x) = t$$

Using a Classical Test Theory framework, field test data can be analyzed to provide information about the quality of test items. Item difficulties, point-biserial correlations, reliability estimates, and various statistics related to rater agreement have been calculated and are summarized in the following section.

Item Difficulty

Item difficulty is an indication of student performance on a specific item. Because this examination contains polytomous items, item means are not appropriate for comparing difficulty across items. Instead, weighted item means were calculated by dividing an item's mean by the maximum points possible for that item.

For multiple-choice items, the 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, then this item is considered easier than a multiple-choice item with correct responses by 30% of the students.

Point-Biserial Correlation

The point-biserial correlation is another classical statistic that can be used to evaluate items. For multiple-choice items, it is the correlation between students' performance on a given item (correct or incorrect) and overall performance scores. This statistic is used to evaluate how well an item identifies students who understand the concept being measured and can be generalized for constructed-response items. The possible range for the point-biserial correlation is -1 to 1, with higher values being more desirable.

Table 2 presents a summary of the classical item analysis for each of the field test forms. The first three columns identify the form number, the number of students who took each form, and the number of items on each field test form. The remaining columns are divided into two sections (i.e., item difficulty and point-biserial correlations). Recall that for constructed-response items, item means were divided by the maximum number of points possible in order to place them in the same metric as the multiple-choice items. For all items except one, item difficulties were below 0.90. With respect to the point-biserial correlations, most of these correlations fell between 0.25 and 0.50.

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
901	838	11	7	4	0	1	6	4
902	856	11	8	3	0	1	6	4
903	871	11	8	3	0	1	6	4
904	867	11	8	3	0	1	7	3
905	868	11	10	1	0	1	7	3
906	853	11	7	4	0	0	8	3
907	841	11	5	6	0	0	7	4
908	840	11	10	1	0	0	8	3
909	855	11	8	3	0	1	7	3
910	857	11	8	3	0	2	5	4
911	852	11	8	3	0	0	7	4
912	856	11	8	3	0	0	7	4
913	855	11	9	2	0	2	5	4
914	860	11	10	0	1	2	6	3
915	845	11	8	3	0	1	6	4
916	842	11	5	6	0	3	5	3
917	854	11	7	4	0	1	5	5
918	859	11	8	3	0	1	7	3
919	858	11	8	3	0	0	8	3
920	865	11	8	3	0	0	7	4
921	840	11	10	1	0	1	7	3
922	840	11	5	6	0	2	4	5
923	847	11	8	3	0	1	7	3
924	842	11	8	3	0	1	6	4
925	833	11	10	1	0	1	7	3

In addition to the summary information provided in Table 2, all of the classical item statistics are provided in Appendix A. 'Max' is the maximum number of possible points. 'N-Count' refers to the number of student records in the analysis. 'Alpha' contains the internal consistency statistics discussed below. For multiple-choice items, 'B' represents the proportion of students who left the item blank and 'M1' through 'M4' are the proportions of students who selected each of the four answer

choices. For constructed-response items, 'B' represents the proportion of students who left the item blank and 'M0' through 'M6' are the proportions of students who received scores 0 through 6. 'Mean' is the average of the scores received by the students. The final column contains the point-biserial correlation for each item. There are some instances of items missing statistics; this occurs when an item was not scored.

Test Reliability

Classical analysis can also be used to measure the reliability of the test. Reliability is the consistency of the results obtained from a measurement with respect to time or among items or subjects that constitute a test. As such, test reliability can be estimated in a variety of ways. Internal consistency indices are a measure of how consistently examinees respond to items within a test. Two factors influence estimates of internal consistency: test length and homogeneity of items. In general, the more items on the examination the higher the reliability, and the more similar the items are the higher the reliability.

Cronbach's α (alpha) (Cronbach, 1951) 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 0.52 to 0.69 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.

Table 3. Test and Scoring Reliability

Form Number	Test Reliability	Scoring Reliability
901	0.63	0.89
902	0.65	0.93
903	0.62	0.95
904	0.60	0.95
905	0.53	0.95
906	0.65	0.92
907	0.66	0.94
908	0.63	0.93
909	0.52	0.94
910	0.62	0.88
911	0.56	0.96
912	0.65	0.91
913	0.54	0.91
914	0.55	0.92
915	0.61	0.87
916	0.59	0.95
917	0.69	0.92
918	0.60	0.88
919	0.55	0.88
920	0.63	0.91
921	0.62	0.92
922	0.65	0.97
923	0.62	0.96
924	0.61	0.92
925	0.63	0.92

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 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 to near 1. Table 3 contains the results from these analyses in the column headed Scoring Reliability. The correlations ranged from 0.87 to 0.97, indicating high scoring reliability.

Inter-rater Agreement

For each constructed-response item, the difference between the first and second reads was computed. When examining inter-rater agreement statistics, it should be kept in mind that the maximum number of points per item varies as shown in the 'Score Points' column of the following tables.

Table 4 contains the proportion of occurrence of these differences for each item. There were no instances of the first read and second read differing by more than 2.

Table 4. Point Differences Between First and Second Reads

			Difference (First Read minus Second Read)						
Form	Item	Score Points	-3	-2	-1	0	1	2	3
901	8	2	0.00	0.00	0.06	0.89	0.05	0.01	0.00
901	9	2	0.00	0.00	0.02	0.93	0.04	0.00	0.00
901	10	4	0.00	0.02	0.07	0.82	0.06	0.03	0.00
901	11	4	0.00	0.04	0.13	0.60	0.17	0.06	0.00
902	8	2	0.00	0.00	0.06	0.87	0.07	0.00	0.00
902	9	6	0.00	0.05	0.05	0.82	0.04	0.03	0.00
902	10	2	0.00	0.00	0.04	0.92	0.04	0.00	0.00
902	11	2	0.00	0.01	0.06	0.91	0.02	0.00	0.00
903	8	2	0.00	0.01	0.06	0.90	0.03	0.00	0.00
903	9	2	0.00	0.00	0.07	0.85	0.08	0.01	0.00
903	10	6	0.00	0.04	0.07	0.83	0.06	0.01	0.00
903	11	2	0.00	0.00	0.07	0.89	0.04	0.01	0.00
904	8	2	0.00	0.00	0.04	0.94	0.03	0.00	0.00
904	9	4	0.00	0.01	0.04	0.89	0.06	0.01	0.00
904	10	2	0.00	0.00	0.08	0.86	0.05	0.01	0.00
904	11	4	0.00	0.03	0.08	0.82	0.06	0.01	0.00
905	8	2	0.00	0.00	0.03	0.93	0.04	0.00	0.00
905	9	6	0.00	0.03	0.05	0.81	0.08	0.03	0.00
905	10	2	0.00	0.00	0.05	0.91	0.04	0.00	0.00
905	11	2	0.00	0.00	0.03	0.93	0.04	0.00	0.00
906	8	4	0.00	0.03	0.05	0.81	0.09	0.01	0.00
906	9	2	0.00	0.01	0.05	0.89	0.05	0.00	0.00
906	10	4	0.00	0.00	0.02	0.96	0.02	0.01	0.00
906	11	2	0.00	0.01	0.03	0.90	0.06	0.00	0.00
907	8	2	0.00	0.00	0.04	0.92	0.04	0.00	0.00
907	9	2	0.00	0.01	0.05	0.90	0.04	0.01	0.00
907	10	4	0.00	0.03	0.03	0.89	0.01	0.04	0.00
907	11	4	0.00	0.02	0.06	0.85	0.04	0.02	0.00
908	8	2	0.00	0.00	0.02	0.95	0.02	0.00	0.00
908	9	2	0.00	0.00	0.03	0.84	0.13	0.00	0.00
908	10	6	0.00	0.02	0.09	0.78	0.08	0.03	0.00
908	11	2	0.00	0.00	0.07	0.86	0.06	0.01	0.00

Table 4. Point Differences Between First and Second Reads (continued)

			Difference (First Read minus Second Read)						
Form	Item	Score Points	-3	-2	-1	0	1	2	3
909	8	2	0.00	0.00	0.04	0.91	0.04	0.00	0.00
909	9	2	0.00	0.01	0.04	0.89	0.06	0.00	0.00
909	10	2	0.00	0.00	0.04	0.94	0.03	0.00	0.00
909	11	6	0.00	0.02	0.03	0.91	0.03	0.01	0.00
910	8	2	0.00	0.01	0.09	0.80	0.09	0.00	0.00
910	9	4	0.00	0.05	0.09	0.76	0.08	0.02	0.00
910	10	2	0.00	0.00	0.05	0.83	0.11	0.01	0.00
910	11	4	0.00	0.00	0.05	0.89	0.06	0.00	0.00
911	8	2	0.00	0.00	0.07	0.92	0.01	0.00	0.00
911	9	6	0.00	0.04	0.04	0.78	0.11	0.02	0.00
911	10	2	0.00	0.00	0.04	0.89	0.06	0.01	0.00
911	11	2	0.00	0.00	0.04	0.96	0.01	0.00	0.00
912	8	4	0.00	0.02	0.08	0.72	0.13	0.04	0.00
912	9	2	0.00	0.00	0.03	0.95	0.02	0.00	0.00
912	10	4	0.00	0.02	0.11	0.79	0.06	0.01	0.00
912	11	2	0.00	0.02	0.06	0.87	0.05	0.00	0.00
913	8	2	0.00	0.01	0.04	0.93	0.03	0.00	0.00
913	9	2	0.00	0.00	0.03	0.94	0.04	0.00	0.00
913	10	4	0.00	0.02	0.06	0.85	0.04	0.02	0.00
913	11	4	0.00	0.01	0.11	0.76	0.10	0.02	0.00
914	8	2	0.00	0.00	0.03	0.93	0.04	0.00	0.00
914	9	2	0.00	0.00	0.06	0.87	0.06	0.00	0.00
914	10	6	0.00	0.04	0.14	0.68	0.08	0.06	0.00
914	11	2	0.00	0.00	0.01	0.96	0.03	0.00	0.00
915	8	2	0.00	0.00	0.03	0.87	0.09	0.00	0.00
915	9	2	0.00	0.00	0.05	0.91	0.04	0.00	0.00
915	10	4	0.00	0.02	0.11	0.73	0.13	0.01	0.00
915	11	4	0.00	0.05	0.07	0.78	0.09	0.01	0.00
916	8	2	0.00	0.00	0.07	0.91	0.02	0.00	0.00
916	9	2	0.00	0.00	0.06	0.85	0.08	0.01	0.00
916	10	6	0.00	0.02	0.05	0.83	0.07	0.03	0.00
916	11	2	0.00	0.01	0.02	0.92	0.06	0.00	0.00

Table 4. Point Differences Between First and Second Reads (continued)

			Difference (First Read minus Second Read)						
Form	Item	Score Points	-3	-2	-1	0	1	2	3
917	8	2	0.00	0.02	0.10	0.77	0.10	0.01	0.00
917	9	2	0.00	0.00	0.06	0.90	0.04	0.00	0.00
917	10	2	0.00	0.00	0.06	0.85	0.09	0.00	0.00
917	11	6	0.00	0.01	0.06	0.88	0.03	0.01	0.00
918	8	2	0.00	0.00	0.07	0.85	0.08	0.00	0.00
918	9	4	0.00	0.01	0.07	0.78	0.08	0.05	0.00
918	10	2	0.00	0.00	0.08	0.87	0.05	0.00	0.00
918	11	4	0.00	0.01	0.03	0.88	0.04	0.04	0.00
919	8	2	0.00	0.00	0.05	0.93	0.02	0.00	0.00
919	9	6	0.00	0.04	0.03	0.92	0.01	0.00	0.00
919	10	2	0.00	0.01	0.05	0.86	0.09	0.00	0.00
919	11	2	0.00	0.00	0.07	0.87	0.06	0.00	0.00
920	8	4	0.00	0.02	0.09	0.85	0.04	0.00	0.00
920	9	2	0.00	0.02	0.07	0.80	0.08	0.03	0.00
920	10	4	0.00	0.01	0.04	0.90	0.02	0.04	0.00
920	11	2	0.00	0.00	0.13	0.72	0.15	0.00	0.00
921	8	2	0.00	0.01	0.01	0.93	0.04	0.00	0.00
921	9	2	0.00	0.00	0.07	0.90	0.02	0.00	0.00
921	10	4	0.00	0.03	0.09	0.78	0.07	0.03	0.00
921	11	4	0.00	0.04	0.06	0.81	0.08	0.01	0.00
922	8	2	0.00	0.00	0.01	0.96	0.03	0.00	0.00
922	9	2	0.00	0.00	0.00	0.99	0.01	0.00	0.00
922	10	6	0.00	0.01	0.04	0.85	0.07	0.04	0.00
922	11	2	0.00	0.00	0.05	0.93	0.01	0.00	0.00
923	8	2	0.00	0.00	0.06	0.89	0.05	0.00	0.00
923	9	2	0.00	0.01	0.08	0.80	0.09	0.01	0.00
923	10	2	0.00	0.00	0.03	0.93	0.04	0.00	0.00
923	11	6	0.00	0.01	0.03	0.87	0.06	0.03	0.00
924	8	2	0.00	0.00	0.12	0.76	0.12	0.01	0.00
924	9	4	0.00	0.01	0.04	0.83	0.08	0.04	0.00
924	10	2	0.00	0.00	0.05	0.90	0.05	0.00	0.00
924	11	4	0.00	0.00	0.01	0.95	0.04	0.00	0.00

Table 4. Point Differences Between First and Second Reads (continued)

			Difference (First Read minus Second Read)						
Form	Item	Score Points	-3	-2	-1	0	1	2	3
925	8	4	0.00	0.06	0.06	0.77	0.08	0.04	0.00
925	9	4	0.00	0.01	0.02	0.92	0.03	0.01	0.00
925	10	2	0.00	0.00	0.11	0.77	0.12	0.00	0.00
925	11	2	0.00	0.00	0.05	0.87	0.06	0.01	0.00

Table 5 contains additional summary information regarding the first and second reads. In the fourth column the percent of exact matches between the first and second scores is provided. 'Adj.' is the percentage of differences with a magnitude of one. 'Total' is the sum of the two prior columns and contains values between 89.7% and 100%. These values indicate a high degree of agreement.

Table 5. First and Second Read Descriptive Statistics and Agreement

				Agreement (%)			Raw Score Mean		Raw Score Standard Deviation			
Form	Item	Score Points	Total N-Count	Exact	Adj.	Total	First Read	Second Read	First Read	Second Read	Intra-Class Correlation	Wt Kappa
901	8	2	132	88.6	10.6	99.2	0.9	0.9	0.93	0.92	0.92	0.88
901	9	2	134	93.3	6.7	100.0	1.1	1.1	0.85	0.87	0.95	0.93
901	10	4	135	82.2	12.6	94.8	0.7	0.7	1.24	1.27	0.89	0.79
901	11	4	136	59.6	30.1	89.7	1.6	1.5	1.52	1.50	0.84	0.69
902	8	2	142	87.3	12.7	100.0	0.6	0.5	0.78	0.77	0.89	0.83
902	9	6	135	82.2	9.6	91.9	0.9	0.9	1.83	1.82	0.94	0.83
902	10	2	135	91.9	8.1	100.0	0.6	0.6	0.84	0.84	0.94	0.90
902	11	2	141	90.8	8.5	99.3	0.7	0.8	0.91	0.94	0.94	0.89
903	8	2	148	89.9	9.5	99.3	1.0	1.0	0.90	0.90	0.93	0.89
903	9	2	144	84.7	14.6	99.3	0.9	0.9	0.92	0.91	0.90	0.84
903	10	6	138	82.6	12.3	94.9	1.6	1.6	2.08	2.04	0.96	0.89
903	11	2	142	88.7	10.6	99.3	0.8	0.8	0.89	0.90	0.92	0.87
904	8	2	142	93.7	6.3	100.0	0.5	0.5	0.83	0.83	0.95	0.92
904	9	4	140	88.6	10.0	98.6	1.1	1.1	1.59	1.58	0.97	0.92
904	10	2	146	85.6	13.0	98.6	0.8	0.8	0.85	0.85	0.87	0.83
904	11	4	139	82.0	14.4	96.4	1.1	1.2	1.54	1.54	0.94	0.86
905	8	2	139	92.8	7.2	100.0	0.2	0.2	0.53	0.52	0.87	0.80
905	9	6	144	80.6	13.2	93.8	1.4	1.3	1.89	1.86	0.95	0.86
905	10	2	138	91.3	8.7	100.0	0.5	0.5	0.77	0.78	0.93	0.88
905	11	2	138	92.8	7.2	100.0	0.3	0.3	0.65	0.61	0.91	0.85
906	8	4	137	81.0	14.6	95.6	0.5	0.5	1.17	1.13	0.88	0.73
906	9	2	132	89.4	9.8	99.2	0.7	0.7	0.88	0.88	0.92	0.87
906	10	4	133	96.2	3.0	99.2	0.4	0.4	1.17	1.16	0.98	0.94
906	11	2	141	90.1	9.2	99.3	0.8	0.7	0.86	0.85	0.92	0.88
907	8	2	138	92.0	8.0	100.0	1.1	1.1	0.93	0.94	0.95	0.92
907	9	2	141	90.1	8.5	98.6	0.6	0.6	0.79	0.77	0.88	0.85
907	10	4	138	89.1	4.3	93.5	1.5	1.5	1.80	1.77	0.95	0.91
907	11	4	140	85.0	10.7	95.7	1.0	1.1	1.31	1.33	0.92	0.86
908	8	2	132	95.5	4.5	100.0	0.1	0.1	0.40	0.36	0.84	0.77
908	9	2	138	84.1	15.9	100.0	0.6	0.5	0.80	0.75	0.88	0.79

Table 5. First and Second Read Descriptive Statistics and Agreement (continued)

				Agreement (%)			Raw Score Mean		Raw Score Standard Deviation			
Form	Item	Score Points	Total N-Count	Exact	Adj.	Total	First Read	Second Read	First Read	Second Read	Intra-Class Correlation	Wt Kappa
908	10	6	139	78.4	16.5	95.0	1.3	1.3	1.79	1.87	0.95	0.85
908	11	2	134	85.8	13.4	99.3	0.4	0.4	0.71	0.71	0.84	0.76
909	8	2	140	91.4	8.6	100.0	0.3	0.3	0.56	0.58	0.87	0.81
909	9	2	142	88.7	10.6	99.3	0.6	0.6	0.84	0.83	0.90	0.85
909	10	2	141	93.6	6.4	100.0	1.5	1.5	0.84	0.84	0.95	0.91
909	11	6	136	91.2	5.9	97.1	0.4	0.4	1.13	1.19	0.94	0.83
910	8	2	140	80.0	18.6	98.6	0.5	0.6	0.77	0.79	0.80	0.72
910	9	4	143	76.2	16.8	93.0	1.0	1.1	1.49	1.46	0.90	0.79
910	10	2	132	83.3	15.9	99.2	0.8	0.7	0.84	0.84	0.87	0.80
910	11	4	140	89.3	10.7	100.0	0.5	0.5	0.77	0.80	0.91	0.86
911	8	2	135	91.9	8.1	100.0	1.1	1.2	0.73	0.70	0.92	0.89
911	9	6	138	78.3	15.2	93.5	1.6	1.5	2.26	2.21	0.96	0.87
911	10	2	142	89.4	9.9	99.3	0.4	0.3	0.69	0.67	0.86	0.80
911	11	2	134	95.5	4.5	100.0	0.9	1.0	0.89	0.88	0.97	0.95
912	8	4	135	71.9	21.5	93.3	1.2	1.1	1.30	1.30	0.86	0.75
912	9	2	136	94.9	5.1	100.0	1.0	1.0	0.98	0.99	0.97	0.95
912	10	4	139	79.1	17.3	96.4	1.0	1.0	1.39	1.41	0.92	0.83
912	11	2	128	86.7	11.7	98.4	0.5	0.5	0.78	0.79	0.86	0.80
913	8	2	141	92.9	6.4	99.3	1.5	1.5	0.82	0.81	0.93	0.90
913	9	2	142	93.7	6.3	100.0	0.4	0.4	0.70	0.69	0.93	0.90
913	10	4	136	85.3	10.3	95.6	0.8	0.8	1.09	1.08	0.88	0.82
913	11	4	141	75.9	20.6	96.5	0.7	0.7	1.13	1.16	0.87	0.73
914	8	2	146	93.2	6.8	100.0	0.7	0.7	0.75	0.74	0.94	0.91
914	9	2	141	87.2	12.8	100.0	0.8	0.8	0.86	0.83	0.91	0.86
914	10	6	142	67.6	22.5	90.1	1.2	1.2	1.78	1.82	0.90	0.76
914	11	2	143	95.8	4.2	100.0	0.4	0.4	0.60	0.58	0.94	0.92
915	8	2	143	87.4	12.6	100.0	0.5	0.5	0.77	0.74	0.89	0.82
915	9	2	138	90.6	9.4	100.0	0.4	0.4	0.65	0.67	0.89	0.83
915	10	4	135	72.6	24.4	97.0	1.0	1.0	1.22	1.23	0.88	0.76
915	11	4	139	77.7	15.8	93.5	0.4	0.5	1.01	1.04	0.80	0.63

Table 5. First and Second Read Descriptive Statistics and Agreement (continued)

				Agreement (%)			Raw Score Mean		Raw Score Standard Deviation			
Form	Item	Score Points	Total N-Count	Exact	Adj.	Total	First Read	Second Read	First Read	Second Read	Intra-Class Correlation	Wt Kappa
916	8	2	136	91.2	8.8	100.0	0.9	0.9	0.88	0.87	0.94	0.91
916	9	2	144	85.4	13.9	99.3	0.6	0.6	0.84	0.84	0.88	0.81
916	10	6	138	83.3	11.6	94.9	1.4	1.3	2.10	2.08	0.96	0.89
916	11	2	142	91.5	7.7	99.3	1.0	1.0	0.91	0.93	0.94	0.91
917	8	2	144	77.1	20.1	97.2	0.8	0.8	0.85	0.85	0.78	0.71
917	9	2	136	89.7	10.3	100.0	0.3	0.4	0.64	0.67	0.88	0.81
917	10	2	139	84.9	15.1	100.0	0.6	0.6	0.75	0.74	0.86	0.80
917	11	6	134	88.1	9.0	97.0	0.8	0.8	1.72	1.72	0.96	0.89
918	8	2	136	84.6	15.4	100.0	0.5	0.5	0.70	0.69	0.84	0.76
918	9	4	136	77.9	15.4	93.4	1.0	0.9	1.33	1.33	0.88	0.79
918	10	2	141	87.2	12.8	100.0	0.4	0.4	0.69	0.68	0.86	0.78
918	11	4	137	88.3	7.3	95.6	0.4	0.3	0.96	0.88	0.86	0.75
919	8	2	130	93.1	6.9	100.0	0.3	0.3	0.60	0.62	0.91	0.85
919	9	6	137	92.0	4.4	96.4	0.2	0.3	0.71	0.93	0.90	0.72
919	10	2	138	85.5	13.8	99.3	0.6	0.6	0.81	0.80	0.87	0.81
919	11	2	139	87.1	12.9	100.0	0.4	0.4	0.67	0.66	0.85	0.79
920	8	4	141	85.1	12.8	97.9	0.5	0.6	1.04	1.06	0.91	0.81
920	9	2	139	79.9	15.1	95.0	1.0	1.0	0.95	0.94	0.80	0.74
920	10	4	140	90.0	5.7	95.7	1.6	1.6	1.75	1.71	0.96	0.92
920	11	2	144	72.2	27.8	100.0	0.5	0.4	0.67	0.65	0.68	0.55
921	8	2	137	93.4	5.8	99.3	0.4	0.4	0.77	0.76	0.92	0.89
921	9	2	135	90.4	9.6	100.0	0.4	0.4	0.71	0.72	0.91	0.84
921	10	4	138	78.3	15.9	94.2	1.2	1.2	1.54	1.60	0.92	0.83
921	11	4	135	80.7	14.1	94.8	0.9	0.9	1.32	1.34	0.90	0.81
922	8	2	135	95.6	4.4	100.0	0.5	0.4	0.74	0.73	0.96	0.93
922	9	2	136	98.5	1.5	100.0	1.1	1.1	0.84	0.84	0.99	0.98
922	10	6	140	85.0	10.7	95.7	1.3	1.2	2.01	2.01	0.97	0.90
922	11	2	134	93.3	6.7	100.0	0.2	0.2	0.53	0.55	0.89	0.82
923	8	2	140	88.6	11.4	100.0	0.8	0.8	0.89	0.89	0.93	0.88
923	9	2	138	80.4	17.4	97.8	0.4	0.4	0.75	0.71	0.76	0.66

Table 5. First and Second Read Descriptive Statistics and Agreement (continued)

				Agreement (%)			Raw Score Mean		Raw Score Standard Deviation			
Form	Item	Score Points	Total N-Count	Exact	Adj.	Total	First Read	Second Read	First Read	Second Read	Intra-Class Correlation	Wt Kappa
923	10	2	135	93.3	6.7	100.0	0.5	0.5	0.81	0.81	0.95	0.91
923	11	6	143	87.4	9.1	96.5	1.6	1.5	2.38	2.40	0.98	0.93
924	8	2	137	75.9	23.4	99.3	0.5	0.5	0.70	0.71	0.73	0.65
924	9	4	137	83.2	11.7	94.9	1.4	1.3	1.58	1.61	0.94	0.87
924	10	2	133	90.2	9.8	100.0	0.3	0.3	0.55	0.55	0.84	0.77
924	11	4	135	94.8	5.2	100.0	0.2	0.2	0.78	0.75	0.96	0.88
925	8	4	138	76.8	13.8	90.6	0.5	0.5	1.00	0.99	0.74	0.60
925	9	4	135	91.9	5.2	97.0	1.8	1.8	1.82	1.80	0.97	0.94
925	10	2	133	76.7	23.3	100.0	0.6	0.6	0.81	0.81	0.82	0.71
925	11	2	135	87.4	11.1	98.5	0.5	0.5	0.81	0.80	0.87	0.81

* Adj. = difference of one

Constructed-Response 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 computed.

Table 5 contains the means and standard deviations for the first and second read 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.

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 items had intra-class correlations greater than or equal to 0.68 (See Table 5). Consistent with other information provided in the table, these values indicate a very high level of scoring reliability.

Weighted Kappa

Weighted Kappa (Cohen, 1968) 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:

- $k > 0.75$ denotes excellent reproducibility
- $0.4 < k \leq 0.75$ denotes good reproducibility
- $0 < k \leq 0.4$ denotes marginal reproducibility

The results found in Table 5 show a high degree of consistency between the first and second reads. The Weighted Kappa statistics ranged from 0.55 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) (Masters, 1982) was used. With use of this model, the difficulty of items and the ability of examinees 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 to be 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 2 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 provides 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 the 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 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.

Item Fit Evaluation

The INFIT statistic is used to determine whether items are functioning in a way that is congruent with the assumptions of the Rasch model. Under these assumptions, how a student will respond to an item depends on the proficiency of the student and the difficulty of the item, both of which are on the same measurement scale. If an item is as difficult as a student is able, the student will have a 50% chance of getting the item correct. If a student is more able than an item is difficult, under the assumptions of the Rasch model, that student has a greater than 50% chance of correctly answering the item. On the other hand, if the item is more difficult than the student is able, he or she has a less than 50% chance of correctly responding to the item. Rasch fit statistics estimate the extent to which an

item is functioning in this predicted manner. Items showing a poor fit with the Rasch model typically have values outside the range of 0.7 to 1.3.

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 while the second pertains to the INFIT statistics. Nearly all of the items fell within the moderate -2.0 to +2.0 difficulty range and no items had an INFIT statistic outside the typical range.

Table 6. Partial Credit Model Item Analysis

Form	N-Count	No. of Items	Rasch			INFIT		
			<-2.0	-2.0 to 2.0	>2.0	<-0.70	-0.70 to 1.30	>1.30
901	838	11	0	11	0	0	11	0
902	856	11	0	11	0	0	11	0
903	871	11	1	10	0	0	11	0
904	867	11	0	11	0	0	11	0
905	868	11	0	11	0	0	11	0
906	853	11	0	11	0	0	11	0
907	841	11	1	10	0	0	11	0
908	840	11	0	10	1	0	11	0
909	855	11	0	11	0	0	11	0
910	857	11	1	9	1	0	11	0
911	852	11	0	11	0	0	11	0
912	856	11	1	10	0	0	11	0
913	855	11	0	11	0	0	11	0
914	860	11	1	10	0	0	11	0
915	845	11	0	11	0	0	11	0
916	842	11	0	11	0	0	11	0
917	854	11	0	11	0	0	11	0
918	859	11	0	11	0	0	11	0
919	858	11	0	11	0	0	11	0
920	865	11	0	11	0	0	11	0
921	840	11	0	11	0	0	11	0
922	840	11	1	10	0	0	11	0
923	847	11	0	11	0	0	11	0
924	842	11	1	10	0	0	11	0
925	833	11	0	11	0	0	11	0

All of the individual IRT item statistics are provided in Appendix B. The column titled RID contains the Rasch item difficulty statistics. S1–S6 contain the step values for the constructed-response items. Finally, INFIT contains the INFIT statistic for each item.

Differential Item Functioning (DIF) Statistics

Statistical procedures are employed to observe whether, on the basis of data, there exists the possibility of unfair treatment of different populations. DIF statistics are used to identify items for which members of a focal group have a different probability of getting the items correct than members of a reference group after the groups have been matched on ability level on the test.

For the multiple-choice items, the Mantel-Haenszel Delta (MHD) DIF statistics were computed (Dorans & Holland, 1992) to classify test items in three levels of DIF for each comparison: negligible DIF (A), moderate DIF (B), and large DIF (C). An item was flagged if it exhibited a B or C category of DIF using the following rules derived from National Assessment of Educational Progress (NAEP) guidelines (Allen, Carlson, & Zalanak, 1999):

- MHD not significantly different from 0 (based on $\alpha = 0.05$) **or** $|MHD| < 1.0$ are classified as A.
- MHD significantly different from 0 and $\{|MHD| \geq 1.0 \text{ and } < 1.5\}$ **or** MHD not significantly different from 0 and $|MHD| \geq 1.0$ are classified as B.
- $|MHD| \geq 1.5$ and significantly different from 0 are classified as C.

For the constructed-response items, the effect size of the standardized mean difference (SMD) was used to flag DIF. The SMD reflects the size of the differences in performance on constructed-response items between student groups matched on the total score. It is the difference between the unweighted item mean of the focal group and the weighted item mean of the reference group. The weights applied to the reference group are applied so that the weighted number of reference group students is the same as in the focal group (within the same ability group). The SMD is divided by the total group item standard deviation to get a measure of the effect size (ES) for the SMD. The SMD effect size groups each item into one of three categories: negligible DIF (AA), moderate DIF (BB), and large DIF (CC). Only categories BB and CC were flagged in the results.

- Probability is > 0.05 **or** if $|ES| \leq 0.17$, classified as AA.
- Probability is > 0.05 and if $0.17 < |ES| \leq 0.25$, classified as BB.
- Probability is > 0.05 and if $|ES| > 0.25$, classified as CC.

Although DIF statistics are typically conducted by gender and ethnicity, the low n-counts for ethnic subgroups did not allow for these statistics to be meaningful. The n-counts for gender allowed for comparisons to be made, but were still somewhat low so resulting statistics should be interpreted with caution.

The DIF statistics for gender are shown in Appendix C. Flagging of items appears in the 'DIF Category' column, and if an item is flagged, the 'Favored Group' column indicates which gender is favored.

Section III: Equating Procedure

The 2010 field test administration for the New York State Regents Examination in Algebra II/Trigonometry consisted of 23 field test forms numbered 903–925 and two anchor forms labeled 901 and 902. The field test forms contained multiple-choice and constructed-response items. All students participating in the field test were administered one of the 25 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 can be seen in Appendix A where item type (e.g., multiple-choice, constructed-response) and the maximum points for each item are displayed.

The anchor forms were equated to the item bank using a common-item equating design. The anchor item difficulty parameters were fixed to their 2009 item bank values. This places the item difficulty estimates and the ability estimates of the students taking the anchor forms onto the item bank scale. After the anchor forms were placed onto the bank scale, the average of the two mean ability estimates for the two forms was computed using ability estimates of non-extreme students. This average ability estimate was used to equate the remaining field test forms as well as updating the item parameters for the anchor forms.

As part of the anchor item equating, an item-stability check was performed. After fixing all of the items to their 2009 bank values, any item with a displacement value with a magnitude greater than 0.30 was no longer fixed and the test form was reanalyzed. If more than one item had a displacement value with a magnitude greater than 0.30, then the item with the largest displacement was freed and the test form was reanalyzed. In a stepwise fashion, this procedure was repeated until all remaining fixed anchor items had displacements with magnitudes less than or equal to 0.30.

Applying the anchor item-stability check to each of the anchor forms resulted in a few items having a displacement value with a magnitude greater than 0.30. For form 901, one item was freed and for form 902, three items were freed. This indicates a strong level of stability in the items used on the anchor forms.

The equated mean ability estimate for form 901 was -0.34 and for form 902 the mean was -0.25. This produced a target mean ability estimate of -0.29 which was used for the remainder of the equating process.

After the anchor forms were equated and the target mean was computed, the field test forms were equated using the equivalent-groups design. The first step was

to calibrate each form separately where all the item parameters were free to estimate (without constraint). From those initial calibrations, the mean ability estimates for each field test form were obtained. The second step was to determine the equating constant for each form by subtracting the mean ability for a given field test form from the target mean ability calculated from the anchor forms (i.e., forms 901 and 902). The respective equating constant was then added to each of the item parameters on a given form. If the resulting mean of the ability estimates for those students did not equal that of the target mean, then the procedure was repeated until the mean abilities for each of the field test forms equaled the target mean ability. Table 7 shows the mean abilities and constants used for the equating.

Table 7. Initial Mean Abilities and Equating Constants

Form Number	Mean Ability	Constant
901	-0.09	-0.19
902	-0.21	-0.07
903	0.03	-0.31
904	-0.38	0.09
905	-0.91	0.59
906	-0.17	-0.11
907	0.03	-0.30
908	-0.78	0.46
909	-0.65	0.34
910	-0.33	0.04
911	-0.29	0.00
912	-0.18	-0.10
913	-0.60	0.29
914	-0.44	0.14
915	-0.86	0.54
916	-0.05	-0.23
917	-0.47	0.17
918	-0.55	0.25
919	-0.59	0.29
920	-0.34	0.04
921	-0.45	0.15
922	-0.08	-0.20
923	-0.44	0.15
924	-0.19	-0.10
925	-0.38	0.08

The equated item parameters for the field test items can now 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.

Section IV: Scaling of Operational Test Forms

Operational test items are selected based on content coverage, content accuracy, 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 2010 operational test maps with content information regarding each item included on the June 2010 and August 2010 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 0.031 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 the June and August 2010 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. This relationship is determined when standards are set and then used for every administration moving forward until the standards are revisited. The baseline target was determined by the New York State Education Department to be June 2010. The raw score to theta relationship from that examination was used and then scale scores are calculated based on the raw score cuts according to the following formula:

$$p(x) = m_3x^3 + m_2x^2 + m_1x + m_0$$

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 shown above was then used to assign all scale scores to the remaining raw scores. The resulting values for $m_1 - m_3$ 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. This is

accomplished by doing a calibration where all items are anchored to their field test parameters. 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 2010 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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Appendix A: Classical Item Analysis

Table 8. Classical Item Analysis

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	901	MC	01	1	838	0.63	0.01		0.30	0.45	0.06	0.17			0.45	0.32
2010_Trig_FT	901	MC	02	1	838	0.63	0.00		0.73	0.07	0.09	0.11			0.73	0.39
2010_Trig_FT	901	MC	03	1	838	0.63	0.01		0.04	0.13	0.67	0.14			0.67	0.37
2010_Trig_FT	901	MC	04	1	838	0.63	0.01		0.41	0.44	0.08	0.06			0.44	0.21
2010_Trig_FT	901	MC	05	1	838	0.63	0.01		0.39	0.23	0.27	0.10			0.39	0.27
2010_Trig_FT	901	MC	06	1	838	0.63	0.01		0.18	0.53	0.13	0.14			0.53	0.44
2010_Trig_FT	901	MC	07	1	838	0.63	0.02		0.14	0.16	0.17	0.51			0.51	0.45
2010_Trig_FT	901	CR	08	2	838	0.63	0.07	0.40	0.15	0.38					0.91	0.62
2010_Trig_FT	901	CR	09	2	838	0.63	0.12	0.26	0.25	0.37					0.98	0.56
2010_Trig_FT	901	CR	10	4	838	0.63	0.11	0.65	0.08	0.08	0.02	0.07			0.59	0.60
2010_Trig_FT	901	CR	11	4	838	0.63	0.07	0.28	0.20	0.17	0.08	0.20			1.58	0.71
2010_Trig_FT	902	MC	01	1	856	0.65	0.01		0.53	0.11	0.09	0.26			0.53	0.42
2010_Trig_FT	902	MC	02	1	856	0.65	0.01		0.04	0.52	0.40	0.03			0.52	0.24
2010_Trig_FT	902	MC	03	1	856	0.65	0.02		0.41	0.20	0.24	0.13			0.41	0.37
2010_Trig_FT	902	MC	04	1	856	0.65	0.02		0.06	0.77	0.11	0.04			0.77	0.29
2010_Trig_FT	902	MC	05	1	856	0.65	0.01		0.49	0.34	0.09	0.05			0.49	0.39
2010_Trig_FT	902	MC	06	1	856	0.65	0.02		0.21	0.16	0.20	0.42			0.42	0.37
2010_Trig_FT	902	MC	07	1	856	0.65	0.02		0.17	0.13	0.48	0.20			0.48	0.42
2010_Trig_FT	902	CR	08	2	856	0.65	0.05	0.59	0.22	0.13					0.49	0.64
2010_Trig_FT	902	CR	09	6	856	0.65	0.16	0.58	0.02	0.05	0.01	0.04	0.03	0.10	1.09	0.81
2010_Trig_FT	902	CR	10	2	856	0.65	0.15	0.46	0.17	0.22					0.61	0.55

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	902	CR	11	2	856	0.65	0.21	0.34	0.09	0.36					0.81	0.62
2010_Trig_FT	903	MC	01	1	871	0.62	0.01		0.21	0.44	0.09	0.24			0.44	0.29
2010_Trig_FT	903	MC	02	1	871	0.62	0.02		0.17	0.09	0.62	0.09			0.62	0.40
2010_Trig_FT	903	MC	03	1	871	0.62	0.03		0.24	0.36	0.17	0.20			0.36	0.36
2010_Trig_FT	903	MC	04	1	871	0.62	0.01		0.04	0.03	0.05	0.87			0.87	0.16
2010_Trig_FT	903	MC	05	1	871	0.62	0.01		0.03	0.81	0.11	0.04			0.81	0.41
2010_Trig_FT	903	MC	06	1	871	0.62	0.02		0.39	0.14	0.40	0.06			0.40	0.40
2010_Trig_FT	903	MC	07	1	871	0.62	0.05		0.34	0.27	0.20	0.15			0.34	0.38
2010_Trig_FT	903	CR	08	2	871	0.62	0.08	0.36	0.18	0.38					0.94	0.60
2010_Trig_FT	903	CR	09	2	871	0.62	0.10	0.42	0.18	0.31					0.79	0.59
2010_Trig_FT	903	CR	10	6	871	0.62	0.22	0.30	0.04	0.11	0.13	0.02	0.05	0.13	1.74	0.79
2010_Trig_FT	903	CR	11	2	871	0.62	0.07	0.46	0.20	0.27					0.74	0.61
2010_Trig_FT	904	MC	01	1	867	0.60	0.00		0.07	0.74	0.08	0.11			0.74	0.26
2010_Trig_FT	904	MC	02	1	867	0.60	0.00		0.09	0.09	0.69	0.13			0.69	0.31
2010_Trig_FT	904	MC	03	1	867	0.60	0.03		0.27	0.34	0.25	0.11			0.27	0.31
2010_Trig_FT	904	MC	04	1	867	0.60	0.01		0.19	0.07	0.69	0.04			0.19	0.23
2010_Trig_FT	904	MC	05	1	867	0.60	0.01		0.20	0.18	0.13	0.48			0.48	0.35
2010_Trig_FT	904	MC	06	1	867	0.60	0.00		0.15	0.21	0.07	0.57			0.57	0.47
2010_Trig_FT	904	MC	07	1	867	0.60	0.07		0.32	0.18	0.29	0.14			0.32	0.36
2010_Trig_FT	904	CR	08	2	867	0.60	0.15	0.53	0.10	0.22					0.54	0.50
2010_Trig_FT	904	CR	09	4	867	0.60	0.11	0.52	0.09	0.06	0.04	0.18			1.05	0.65
2010_Trig_FT	904	CR	10	2	867	0.60	0.13	0.40	0.25	0.23					0.70	0.58

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	904	CR	11	4	867	0.60	0.19	0.44	0.08	0.07	0.05	0.16			1.03	0.75
2010_Trig_FT	905	MC	01	1	868	0.53	0.04		0.30	0.24	0.35	0.08			0.35	0.35
2010_Trig_FT	905	MC	02	1	868	0.53	0.04		0.28	0.36	0.13	0.19			0.28	0.36
2010_Trig_FT	905	MC	03	1	868	0.53	0.01		0.59	0.11	0.10	0.19			0.19	0.23
2010_Trig_FT	905	MC	04	1	868	0.53	0.03		0.08	0.25	0.34	0.31			0.34	0.33
2010_Trig_FT	905	MC	05	1	868	0.53	0.02		0.43	0.09	0.36	0.10			0.43	0.37
2010_Trig_FT	905	MC	06	1	868	0.53	0.02		0.02	0.52	0.33	0.11			0.52	0.25
2010_Trig_FT	905	MC	07	1	868	0.53	0.04		0.38	0.39	0.14	0.05			0.38	0.32
2010_Trig_FT	905	CR	08	2	868	0.53	0.14	0.70	0.10	0.06					0.23	0.53
2010_Trig_FT	905	CR	09	6	868	0.53	0.10	0.46	0.12	0.11	0.06	0.02	0.10	0.04	1.28	0.81
2010_Trig_FT	905	CR	10	2	868	0.53	0.16	0.58	0.15	0.12					0.39	0.40
2010_Trig_FT	905	CR	11	2	868	0.53	0.31	0.52	0.11	0.07					0.24	0.55
2010_Trig_FT	906	MC	01	1	853	0.65	0.02		0.06	0.78	0.09	0.05			0.78	0.41
2010_Trig_FT	906	MC	02	1	853	0.65	0.03		0.17	0.29	0.19	0.33			0.33	0.43
2010_Trig_FT	906	MC	03	1	853	0.65	0.01		0.69	0.16	0.11	0.03			0.69	0.46
2010_Trig_FT	906	MC	04	1	853	0.65	0.01		0.12	0.08	0.12	0.66			0.66	0.48
2010_Trig_FT	906	MC	05	1	853	0.65	0.01		0.40	0.04	0.45	0.09			0.40	0.40
2010_Trig_FT	906	MC	06	1	853	0.65	0.06		0.13	0.26	0.42	0.13			0.42	0.43
2010_Trig_FT	906	MC	07	1	853	0.65	0.02		0.03	0.17	0.53	0.25			0.53	0.37
2010_Trig_FT	906	CR	08	4	853	0.65	0.22	0.58	0.07	0.03	0.03	0.07			0.50	0.60
2010_Trig_FT	906	CR	09	2	853	0.65	0.29	0.28	0.14	0.29					0.72	0.50
2010_Trig_FT	906	CR	10	4	853	0.65	0.23	0.62	0.03	0.03	0.02	0.08			0.46	0.62

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	906	CR	11	2	853	0.65	0.19	0.35	0.19	0.27					0.74	0.56
2010_Trig_FT	907	MC	01	1	841	0.66	0.00		0.07	0.84	0.03	0.05			0.84	0.37
2010_Trig_FT	907	MC	02	1	841	0.66	0.04		0.54	0.17	0.19	0.05			0.54	0.48
2010_Trig_FT	907	MC	03	1	841	0.66	0.01		0.04	0.66	0.19	0.11			0.66	0.39
2010_Trig_FT	907	MC	04	1	841	0.66	0.02		0.16	0.17	0.13	0.51			0.51	0.36
2010_Trig_FT	907	MC	05	1	841	0.66	0.02		0.28	0.42	0.08	0.20			0.42	0.31
2010_Trig_FT	907	MC	06	1	841	0.66	0.04		0.25	0.19	0.36	0.15			0.36	0.39
2010_Trig_FT	907	MC	07	1	841	0.66	0.03		0.06	0.07	0.73	0.11			0.73	0.28
2010_Trig_FT	907	CR	08	2	841	0.66	0.16	0.27	0.10	0.47					1.04	0.61
2010_Trig_FT	907	CR	09	2	841	0.66	0.07	0.56	0.22	0.14					0.51	0.56
2010_Trig_FT	907	CR	10	4	841	0.66	0.15	0.43	0.02	0.07	0.04	0.28			1.42	0.78
2010_Trig_FT	907	CR	11	4	841	0.66	0.24	0.31	0.21	0.03	0.17	0.03			0.92	0.66
2010_Trig_FT	908	MC	01	1	840	0.63	0.03		0.33	0.16	0.43	0.06			0.33	0.42
2010_Trig_FT	908	MC	02	1	840	0.63	0.00		0.35	0.41	0.05	0.19			0.41	0.33
2010_Trig_FT	908	MC	03	1	840	0.63	0.01		0.19	0.10	0.44	0.26			0.44	0.44
2010_Trig_FT	908	MC	04	1	840	0.63	0.02		0.21	0.29	0.30	0.18			0.29	0.35
2010_Trig_FT	908	MC	05	1	840	0.63	0.02		0.34	0.15	0.11	0.39			0.39	0.42
2010_Trig_FT	908	MC	06	1	840	0.63	0.03		0.08	0.14	0.58	0.17			0.58	0.36
2010_Trig_FT	908	MC	07	1	840	0.63	0.03		0.08	0.24	0.25	0.40			0.40	0.41
2010_Trig_FT	908	CR	08	2	840	0.63	0.34	0.59	0.05	0.02					0.08	0.29
2010_Trig_FT	908	CR	09	2	840	0.63	0.23	0.38	0.15	0.24					0.62	0.67
2010_Trig_FT	908	CR	10	6	840	0.63	0.18	0.34	0.22	0.07	0.03	0.06	0.04	0.07	1.28	0.81

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	908	CR	11	2	840	0.63	0.28	0.49	0.08	0.16					0.39	0.54
2010_Trig_FT	909	MC	01	1	855	0.52	0.01		0.09	0.77	0.06	0.08			0.77	0.33
2010_Trig_FT	909	MC	02	1	855	0.52	0.01		0.31	0.30	0.29	0.10			0.29	0.27
2010_Trig_FT	909	MC	03	1	855	0.52	0.02		0.25	0.17	0.32	0.23			0.25	0.40
2010_Trig_FT	909	MC	04	1	855	0.52	0.03		0.28	0.22	0.31	0.17			0.22	0.17
2010_Trig_FT	909	MC	05	1	855	0.52	0.02		0.09	0.35	0.32	0.22			0.35	0.27
2010_Trig_FT	909	MC	06	1	855	0.52	0.02		0.53	0.24	0.07	0.14			0.53	0.32
2010_Trig_FT	909	MC	07	1	855	0.52	0.02		0.41	0.35	0.09	0.14			0.35	0.29
2010_Trig_FT	909	CR	08	2	855	0.52	0.09	0.71	0.16	0.04					0.24	0.43
2010_Trig_FT	909	CR	09	2	855	0.52	0.11	0.53	0.15	0.21					0.58	0.63
2010_Trig_FT	909	CR	10	2	855	0.52	0.09	0.20	0.06	0.66					1.37	0.52
2010_Trig_FT	909	CR	11	6	855	0.52	0.26	0.61	0.03	0.02	0.01	0.05	0.01	0.02	0.43	0.70
2010_Trig_FT	910	MC	01	1	857	0.62	0.00		0.01	0.03	0.08	0.88			0.88	0.23
2010_Trig_FT	910	MC	02	1	857	0.62	0.00		0.06	0.56	0.32	0.06			0.56	0.18
2010_Trig_FT	910	MC	03	1	857	0.62	0.02		0.28	0.40	0.19	0.11			0.40	0.45
2010_Trig_FT	910	MC	04	1	857	0.62	0.01		0.14	0.13	0.67	0.04			0.67	0.44
2010_Trig_FT	910	MC	05	1	857	0.62	0.02		0.40	0.11	0.09	0.38			0.40	0.26
2010_Trig_FT	910	MC	06	1	857	0.62	0.05		0.09	0.24	0.28	0.34			0.34	0.38
2010_Trig_FT	910	MC	07	1	857	0.62	0.05		0.18	0.31	0.23	0.23			0.31	0.33
2010_Trig_FT	910	CR	08	2	857	0.62	0.17	0.44	0.21	0.18					0.56	0.62
2010_Trig_FT	910	CR	09	4	857	0.62	0.13	0.43	0.07	0.10	0.10	0.17			1.24	0.75
2010_Trig_FT	910	CR	10	2	857	0.62	0.10	0.39	0.24	0.26					0.77	0.55

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	910	CR	11	4	857	0.62	0.21	0.43	0.23	0.10	0.03	0.00			0.52	0.61
2010_Trig_FT	911	MC	01	1	852	0.56	0.01		0.07	0.30	0.19	0.43			0.43	0.35
2010_Trig_FT	911	MC	02	1	852	0.56	0.01		0.17	0.06	0.66	0.10			0.66	0.28
2010_Trig_FT	911	MC	03	1	852	0.56	0.00		0.17	0.38	0.17	0.28			0.38	0.26
2010_Trig_FT	911	MC	04	1	852	0.56	0.00		0.14	0.22	0.48	0.16			0.48	0.39
2010_Trig_FT	911	MC	05	1	852	0.56	0.01		0.13	0.05	0.07	0.74			0.74	0.37
2010_Trig_FT	911	MC	06	1	852	0.56	0.02		0.36	0.22	0.22	0.17			0.36	0.36
2010_Trig_FT	911	MC	07	1	852	0.56	0.04		0.25	0.32	0.11	0.28			0.28	0.38
2010_Trig_FT	911	CR	08	2	852	0.56	0.07	0.11	0.44	0.37					1.19	0.51
2010_Trig_FT	911	CR	09	6	852	0.56	0.12	0.52	0.05	0.06	0.06	0.07	0.04	0.07	1.26	0.74
2010_Trig_FT	911	CR	10	2	852	0.56	0.18	0.62	0.12	0.09					0.29	0.51
2010_Trig_FT	911	CR	11	2	852	0.56	0.13	0.39	0.19	0.29					0.78	0.61
2010_Trig_FT	912	MC	01	1	856	0.65	0.01		0.07	0.05	0.84	0.03			0.84	0.31
2010_Trig_FT	912	MC	02	1	856	0.65	0.01		0.37	0.48	0.10	0.04			0.37	0.32
2010_Trig_FT	912	MC	03	1	856	0.65	0.01		0.46	0.40	0.08	0.05			0.40	0.45
2010_Trig_FT	912	MC	04	1	856	0.65	0.02		0.05	0.06	0.14	0.74			0.74	0.26
2010_Trig_FT	912	MC	05	1	856	0.65	0.03		0.10	0.26	0.43	0.18			0.26	0.27
2010_Trig_FT	912	MC	06	1	856	0.65	0.01		0.42	0.20	0.19	0.18			0.42	0.43
2010_Trig_FT	912	MC	07	1	856	0.65	0.02		0.05	0.13	0.19	0.60			0.60	0.27
2010_Trig_FT	912	CR	08	4	856	0.65	0.05	0.36	0.24	0.13	0.15	0.08			1.26	0.76
2010_Trig_FT	912	CR	09	2	856	0.65	0.11	0.42	0.03	0.44					0.91	0.54
2010_Trig_FT	912	CR	10	4	856	0.65	0.11	0.49	0.10	0.09	0.10	0.11			1.01	0.73

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	912	CR	11	2	856	0.65	0.21	0.50	0.15	0.14					0.43	0.62
2010_Trig_FT	913	MC	01	1	855	0.54	0.01		0.04	0.06	0.09	0.80			0.80	0.36
2010_Trig_FT	913	MC	02	1	855	0.54	0.02		0.27	0.42	0.19	0.10			0.19	0.23
2010_Trig_FT	913	MC	03	1	855	0.54	0.01		0.61	0.13	0.11	0.14			0.13	0.30
2010_Trig_FT	913	MC	04	1	855	0.54	0.01		0.39	0.29	0.14	0.17			0.39	0.37
2010_Trig_FT	913	MC	05	1	855	0.54	0.02		0.22	0.19	0.45	0.12			0.45	0.17
2010_Trig_FT	913	MC	06	1	855	0.54	0.02		0.42	0.13	0.26	0.18			0.42	0.41
2010_Trig_FT	913	MC	07	1	855	0.54	0.02		0.32	0.19	0.40	0.07			0.40	0.43
2010_Trig_FT	913	CR	08	2	855	0.54	0.02	0.22	0.10	0.66					1.42	0.56
2010_Trig_FT	913	CR	09	2	855	0.54	0.22	0.53	0.14	0.11					0.37	0.52
2010_Trig_FT	913	CR	10	4	855	0.54	0.07	0.64	0.03	0.22	0.02	0.03			0.62	0.53
2010_Trig_FT	913	CR	11	4	855	0.54	0.11	0.55	0.14	0.09	0.03	0.09			0.77	0.66
2010_Trig_FT	914	MC	01	1	860	0.55	0.00		0.41	0.16	0.08	0.35			0.41	0.39
2010_Trig_FT	914	MC	02	1	860	0.55	0.03		0.31	0.13	0.25	0.28			0.28	0.35
2010_Trig_FT	914	MC	03	1	860	0.55	0.00		0.05	0.49	0.09	0.37			0.49	0.36
2010_Trig_FT	914	MC	04	1	860	0.55	0.01		0.31	0.11	0.44	0.13			0.31	0.18
2010_Trig_FT	914	MC	05	1	860	0.55	0.00		0.01	0.04	0.03	0.91			0.91	0.22
2010_Trig_FT	914	MC	06	1	860	0.55	0.02		0.46	0.26	0.11	0.15			0.46	0.33
2010_Trig_FT	914	MC	07	1	860	0.55	0.03		0.18	0.29	0.35	0.14			0.35	0.31
2010_Trig_FT	914	CR	08	2	860	0.55	0.04	0.39	0.39	0.18					0.74	0.60
2010_Trig_FT	914	CR	09	2	860	0.55	0.12	0.38	0.27	0.23					0.73	0.56
2010_Trig_FT	914	CR	10	6	860	0.55	0.08	0.54	0.12	0.06	0.05	0.04	0.06	0.06	1.19	0.80

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	914	CR	11	2	860	0.55	0.15	0.51	0.30	0.04					0.39	0.42
2010_Trig_FT	915	MC	01	1	845	0.61	0.02		0.31	0.20	0.15	0.32			0.31	0.37
2010_Trig_FT	915	MC	02	1	845	0.61	0.01		0.18	0.61	0.08	0.12			0.61	0.43
2010_Trig_FT	915	MC	03	1	845	0.61	0.02		0.14	0.63	0.07	0.14			0.14	0.09
2010_Trig_FT	915	MC	04	1	845	0.61	0.04		0.10	0.13	0.50	0.23			0.50	0.27
2010_Trig_FT	915	MC	05	1	845	0.61	0.02		0.26	0.26	0.07	0.39			0.26	0.45
2010_Trig_FT	915	MC	06	1	845	0.61	0.01		0.10	0.63	0.12	0.14			0.63	0.32
2010_Trig_FT	915	MC	07	1	845	0.61	0.01		0.25	0.16	0.44	0.14			0.14	0.32
2010_Trig_FT	915	CR	08	2	845	0.61	0.08	0.58	0.23	0.12					0.47	0.63
2010_Trig_FT	915	CR	09	2	845	0.61	0.16	0.55	0.18	0.11					0.41	0.55
2010_Trig_FT	915	CR	10	4	845	0.61	0.10	0.34	0.22	0.18	0.07	0.09			1.15	0.67
2010_Trig_FT	915	CR	11	4	845	0.61	0.09	0.69	0.08	0.05	0.04	0.04			0.47	0.65
2010_Trig_FT	916	MC	01	1	842	0.59	0.00		0.06	0.10	0.29	0.54			0.54	0.22
2010_Trig_FT	916	MC	02	1	842	0.59	0.01		0.06	0.09	0.60	0.24			0.60	0.34
2010_Trig_FT	916	MC	03	1	842	0.59	0.02		0.11	0.29	0.13	0.45			0.45	0.46
2010_Trig_FT	916	MC	04	1	842	0.59	0.01		0.13	0.09	0.60	0.18			0.60	0.19
2010_Trig_FT	916	MC	05	1	842	0.59	0.01		0.66	0.21	0.07	0.05			0.66	0.46
2010_Trig_FT	916	MC	06	1	842	0.59	0.02		0.26	0.36	0.25	0.11			0.25	0.23
2010_Trig_FT	916	MC	07	1	842	0.59	0.03		0.08	0.60	0.11	0.18			0.60	0.43
2010_Trig_FT	916	CR	08	2	842	0.59	0.14	0.29	0.28	0.30					0.88	0.41
2010_Trig_FT	916	CR	09	2	842	0.59	0.09	0.49	0.17	0.25					0.67	0.62
2010_Trig_FT	916	CR	10	6	842	0.59	0.16	0.47	0.05	0.09	0.05	0.07	0.04	0.07	1.29	0.78

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	916	CR	11	2	842	0.59	0.11	0.27	0.14	0.48					1.10	0.63
2010_Trig_FT	917	MC	01	1	854	0.69	0.04		0.25	0.51	0.10	0.10			0.51	0.41
2010_Trig_FT	917	MC	02	1	854	0.69	0.01		0.52	0.11	0.33	0.04			0.52	0.24
2010_Trig_FT	917	MC	03	1	854	0.69	0.02		0.34	0.38	0.13	0.14			0.34	0.52
2010_Trig_FT	917	MC	04	1	854	0.69	0.01		0.11	0.05	0.72	0.11			0.72	0.35
2010_Trig_FT	917	MC	05	1	854	0.69	0.04		0.09	0.12	0.34	0.41			0.41	0.46
2010_Trig_FT	917	MC	06	1	854	0.69	0.01		0.15	0.57	0.06	0.22			0.22	0.38
2010_Trig_FT	917	MC	07	1	854	0.69	0.05		0.54	0.13	0.18	0.10			0.54	0.49
2010_Trig_FT	917	CR	08	2	854	0.69	0.05	0.41	0.29	0.26					0.80	0.62
2010_Trig_FT	917	CR	09	2	854	0.69	0.14	0.57	0.15	0.15					0.44	0.53
2010_Trig_FT	917	CR	10	2	854	0.69	0.08	0.49	0.25	0.17					0.60	0.67
2010_Trig_FT	917	CR	11	6	854	0.69	0.27	0.52	0.05	0.04	0.02	0.03	0.01	0.06	0.72	0.77
2010_Trig_FT	918	MC	01	1	859	0.60	0.01		0.06	0.70	0.18	0.05			0.70	0.38
2010_Trig_FT	918	MC	02	1	859	0.60	0.01		0.14	0.18	0.14	0.53			0.53	0.35
2010_Trig_FT	918	MC	03	1	859	0.60	0.02		0.37	0.31	0.12	0.18			0.37	0.25
2010_Trig_FT	918	MC	04	1	859	0.60	0.01		0.16	0.61	0.14	0.08			0.61	0.39
2010_Trig_FT	918	MC	05	1	859	0.60	0.02		0.44	0.13	0.27	0.15			0.44	0.44
2010_Trig_FT	918	MC	06	1	859	0.60	0.02		0.24	0.35	0.24	0.14			0.35	0.30
2010_Trig_FT	918	MC	07	1	859	0.60	0.04		0.44	0.23	0.17	0.11			0.23	0.09
2010_Trig_FT	918	CR	08	2	859	0.60	0.12	0.55	0.16	0.17					0.49	0.48
2010_Trig_FT	918	CR	09	4	859	0.60	0.10	0.46	0.13	0.14	0.08	0.08			0.99	0.74
2010_Trig_FT	918	CR	10	2	859	0.60	0.24	0.55	0.12	0.10					0.31	0.66

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	918	CR	11	4	859	0.60	0.28	0.55	0.04	0.07	0.04	0.02			0.38	0.58
2010_Trig_FT	919	MC	01	1	858	0.55	0.01		0.05	0.07	0.29	0.58			0.58	0.41
2010_Trig_FT	919	MC	02	1	858	0.55	0.04		0.16	0.20	0.35	0.24			0.35	0.31
2010_Trig_FT	919	MC	03	1	858	0.55	0.00		0.24	0.19	0.09	0.48			0.48	0.54
2010_Trig_FT	919	MC	04	1	858	0.55	0.02		0.09	0.65	0.12	0.12			0.65	0.34
2010_Trig_FT	919	MC	05	1	858	0.55	0.02		0.33	0.08	0.25	0.33			0.33	0.28
2010_Trig_FT	919	MC	06	1	858	0.55	0.03		0.29	0.15	0.31	0.23			0.23	0.31
2010_Trig_FT	919	MC	07	1	858	0.55	0.01		0.07	0.12	0.13	0.67			0.67	0.40
2010_Trig_FT	919	CR	08	2	858	0.55	0.19	0.60	0.12	0.09					0.31	0.44
2010_Trig_FT	919	CR	09	6	858	0.55	0.15	0.76	0.04	0.02	0.02	0.00	0.01	0.01	0.24	0.51
2010_Trig_FT	919	CR	10	2	858	0.55	0.09	0.50	0.17	0.24					0.65	0.62
2010_Trig_FT	919	CR	11	2	858	0.55	0.17	0.54	0.18	0.10					0.39	0.47
2010_Trig_FT	920	MC	01	1	865	0.63	0.01		0.13	0.58	0.18	0.10			0.58	0.31
2010_Trig_FT	920	MC	02	1	865	0.63	0.01		0.74	0.12	0.09	0.03			0.74	0.41
2010_Trig_FT	920	MC	03	1	865	0.63	0.01		0.34	0.38	0.17	0.10			0.34	0.44
2010_Trig_FT	920	MC	04	1	865	0.63	0.01		0.06	0.49	0.40	0.04			0.40	0.39
2010_Trig_FT	920	MC	05	1	865	0.63	0.05		0.15	0.25	0.26	0.29			0.29	0.36
2010_Trig_FT	920	MC	06	1	865	0.63	0.02		0.11	0.19	0.15	0.53			0.53	0.45
2010_Trig_FT	920	MC	07	1	865	0.63	0.02		0.11	0.31	0.13	0.43			0.43	0.42
2010_Trig_FT	920	CR	08	4	865	0.63	0.08	0.60	0.11	0.15	0.02	0.04			0.64	0.60
2010_Trig_FT	920	CR	09	2	865	0.63	0.11	0.37	0.13	0.38					0.90	0.59
2010_Trig_FT	920	CR	10	4	865	0.63	0.17	0.32	0.04	0.09	0.09	0.29			1.66	0.70

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	920	CR	11	2	865	0.63	0.12	0.52	0.26	0.09					0.45	0.52
2010_Trig_FT	921	MC	01	1	840	0.62	0.02		0.32	0.48	0.12	0.07			0.48	0.33
2010_Trig_FT	921	MC	02	1	840	0.62	0.02		0.45	0.17	0.27	0.09			0.45	0.44
2010_Trig_FT	921	MC	03	1	840	0.62	0.02		0.14	0.48	0.19	0.16			0.48	0.47
2010_Trig_FT	921	MC	04	1	840	0.62	0.01		0.30	0.57	0.05	0.06			0.57	0.24
2010_Trig_FT	921	MC	05	1	840	0.62	0.01		0.23	0.21	0.18	0.37			0.37	0.41
2010_Trig_FT	921	MC	06	1	840	0.62	0.04		0.49	0.16	0.10	0.21			0.49	0.37
2010_Trig_FT	921	MC	07	1	840	0.62	0.03		0.11	0.22	0.44	0.21			0.44	0.33
2010_Trig_FT	921	CR	08	2	840	0.62	0.21	0.51	0.14	0.14					0.42	0.54
2010_Trig_FT	921	CR	09	2	840	0.62	0.21	0.57	0.11	0.11					0.33	0.48
2010_Trig_FT	921	CR	10	4	840	0.62	0.09	0.50	0.09	0.07	0.09	0.15			1.10	0.74
2010_Trig_FT	921	CR	11	4	840	0.62	0.16	0.45	0.11	0.16	0.04	0.08			0.85	0.62
2010_Trig_FT	922	MC	01	1	840	0.65	0.02		0.07	0.22	0.58	0.11			0.58	0.45
2010_Trig_FT	922	MC	02	1	840	0.65	0.01		0.15	0.15	0.13	0.56			0.56	0.48
2010_Trig_FT	922	MC	03	1	840	0.65	0.00		0.58	0.35	0.05	0.02			0.58	0.24
2010_Trig_FT	922	MC	04	1	840	0.65	0.01		0.05	0.06	0.81	0.08			0.81	0.22
2010_Trig_FT	922	MC	05	1	840	0.65	0.02		0.13	0.70	0.10	0.05			0.70	0.39
2010_Trig_FT	922	MC	06	1	840	0.65	0.02		0.16	0.58	0.14	0.10			0.58	0.51
2010_Trig_FT	922	MC	07	1	840	0.65	0.02		0.37	0.15	0.26	0.21			0.37	0.50
2010_Trig_FT	922	CR	08	2	840	0.65	0.14	0.58	0.15	0.14					0.43	0.51
2010_Trig_FT	922	CR	09	2	840	0.65	0.13	0.29	0.29	0.30					0.88	0.55
2010_Trig_FT	922	CR	10	6	840	0.65	0.27	0.38	0.07	0.04	0.04	0.04	0.15	0.02	1.25	0.82

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	922	CR	11	2	840	0.65	0.28	0.51	0.12	0.08					0.29	0.59
2010_Trig_FT	923	MC	01	1	847	0.62	0.01		0.14	0.63	0.12	0.10			0.63	0.44
2010_Trig_FT	923	MC	02	1	847	0.62	0.03		0.12	0.40	0.21	0.24			0.40	0.30
2010_Trig_FT	923	MC	03	1	847	0.62	0.01		0.21	0.56	0.10	0.12			0.56	0.40
2010_Trig_FT	923	MC	04	1	847	0.62	0.02		0.15	0.17	0.20	0.46			0.20	0.22
2010_Trig_FT	923	MC	05	1	847	0.62	0.01		0.09	0.14	0.07	0.70			0.70	0.40
2010_Trig_FT	923	MC	06	1	847	0.62	0.01		0.12	0.49	0.09	0.28			0.28	0.40
2010_Trig_FT	923	MC	07	1	847	0.62	0.02		0.48	0.13	0.34	0.04			0.48	0.34
2010_Trig_FT	923	CR	08	2	847	0.62	0.07	0.46	0.17	0.29					0.76	0.64
2010_Trig_FT	923	CR	09	2	847	0.62	0.15	0.55	0.14	0.16					0.45	0.56
2010_Trig_FT	923	CR	10	2	847	0.62	0.23	0.49	0.12	0.16					0.44	0.48
2010_Trig_FT	923	CR	11	6	847	0.62	0.19	0.46	0.05	0.05	0.07	0.01	0.04	0.12	1.36	0.83
2010_Trig_FT	924	MC	01	1	842	0.61	0.00		0.03	0.04	0.06	0.86			0.86	0.24
2010_Trig_FT	924	MC	02	1	842	0.61	0.01		0.20	0.46	0.14	0.18			0.46	0.31
2010_Trig_FT	924	MC	03	1	842	0.61	0.02		0.33	0.10	0.47	0.08			0.47	0.31
2010_Trig_FT	924	MC	04	1	842	0.61	0.01		0.21	0.42	0.14	0.22			0.42	0.38
2010_Trig_FT	924	MC	05	1	842	0.61	0.02		0.47	0.21	0.18	0.12			0.47	0.40
2010_Trig_FT	924	MC	06	1	842	0.61	0.02		0.16	0.20	0.50	0.13			0.50	0.41
2010_Trig_FT	924	MC	07	1	842	0.61	0.03		0.10	0.05	0.78	0.04			0.78	0.40
2010_Trig_FT	924	CR	08	2	842	0.61	0.05	0.52	0.29	0.14					0.57	0.58
2010_Trig_FT	924	CR	09	4	842	0.61	0.09	0.43	0.07	0.18	0.07	0.17			1.28	0.80
2010_Trig_FT	924	CR	10	2	842	0.61	0.32	0.46	0.14	0.08					0.30	0.51

Table 8. Classical Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2010_Trig_FT	924	CR	11	4	842	0.61	0.32	0.55	0.02	0.04	0.02	0.06			0.37	0.52
2010_Trig_FT	925	MC	01	1	833	0.63	0.01		0.11	0.47	0.14	0.27			0.47	0.33
2010_Trig_FT	925	MC	02	1	833	0.63	0.02		0.05	0.10	0.67	0.15			0.67	0.42
2010_Trig_FT	925	MC	03	1	833	0.63	0.02		0.22	0.34	0.28	0.14			0.34	0.48
2010_Trig_FT	925	MC	04	1	833	0.63	0.01		0.43	0.05	0.47	0.04			0.47	0.41
2010_Trig_FT	925	MC	05	1	833	0.63	0.02		0.33	0.17	0.14	0.34			0.34	0.23
2010_Trig_FT	925	MC	06	1	833	0.63	0.05		0.40	0.25	0.21	0.10			0.40	0.41
2010_Trig_FT	925	MC	07	1	833	0.63	0.04		0.10	0.19	0.18	0.49			0.49	0.49
2010_Trig_FT	925	CR	08	4	833	0.63	0.18	0.54	0.14	0.07	0.02	0.04			0.53	0.48
2010_Trig_FT	925	CR	09	4	833	0.63	0.05	0.36	0.02	0.11	0.13	0.32			1.93	0.74
2010_Trig_FT	925	CR	10	2	833	0.63	0.16	0.41	0.20	0.23					0.67	0.63
2010_Trig_FT	925	CR	11	2	833	0.63	0.27	0.40	0.14	0.19					0.53	0.51

Appendix B: Partial Credit Model Item Analysis

Table 9. Partial Credit Model Item Analysis

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	901	MC	01	1	838	-0.0168							1.06
2010_Trig_FT	901	MC	02	1	838	-1.3491							0.97
2010_Trig_FT	901	MC	03	1	838	-1.0411							1.01
2010_Trig_FT	901	MC	04	1	838	0.0323							1.17
2010_Trig_FT	901	MC	05	1	838	0.2706							1.10
2010_Trig_FT	901	MC	06	1	838	-0.3965							0.97
2010_Trig_FT	901	MC	07	1	838	-0.2987							0.94
2010_Trig_FT	901	CR	08	2	838	-0.0726	0.7308	-0.7308					0.91
2010_Trig_FT	901	CR	09	2	838	-0.2038	0.1169	-0.1169					0.99
2010_Trig_FT	901	CR	10	4	838	0.9149	1.1032	-0.7527	0.9530	-1.3036			0.94
2010_Trig_FT	901	CR	11	4	838	0.0707	-0.2191	-0.1394	0.8866	-0.5280			0.94
2010_Trig_FT	902	MC	01	1	856	-0.4503							0.99
2010_Trig_FT	902	MC	02	1	856	-0.3953							1.19
2010_Trig_FT	902	MC	03	1	856	0.1400							1.05
2010_Trig_FT	902	MC	04	1	856	-1.7427							1.01
2010_Trig_FT	902	MC	05	1	856	-0.2691							1.05
2010_Trig_FT	902	MC	06	1	856	0.0839							1.03
2010_Trig_FT	902	MC	07	1	856	-0.2253							0.99
2010_Trig_FT	902	CR	08	2	856	0.8316	-0.1019	0.1019					0.86
2010_Trig_FT	902	CR	09	6	856	0.7297	2.6559	-1.9043	0.9265	-1.3015	0.3746	-0.7512	0.76
2010_Trig_FT	902	CR	10	2	856	0.4660	0.4511	-0.4511					1.05

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	902	CR	11	2	856	0.0306	1.2751	-1.2751					0.93
2010_Trig_FT	903	MC	01	1	871	0.0165							1.13
2010_Trig_FT	903	MC	02	1	871	-0.8170							1.00
2010_Trig_FT	903	MC	03	1	871	0.4143							1.04
2010_Trig_FT	903	MC	04	1	871	-2.4683							1.13
2010_Trig_FT	903	MC	05	1	871	-1.9410							0.89
2010_Trig_FT	903	MC	06	1	871	0.2400							1.01
2010_Trig_FT	903	MC	07	1	871	0.5246							1.02
2010_Trig_FT	903	CR	08	2	871	-0.1270	0.5251	-0.5251					0.94
2010_Trig_FT	903	CR	09	2	871	0.1332	0.4709	-0.4709					0.97
2010_Trig_FT	903	CR	10	6	871	0.4019	1.6651	-1.7630	-0.4846	1.5688	-0.5673	-0.4190	0.90
2010_Trig_FT	903	CR	11	2	871	0.2371	0.3246	-0.3246					0.94
2010_Trig_FT	904	MC	01	1	867	-1.4960							1.13
2010_Trig_FT	904	MC	02	1	867	-1.1980							1.05
2010_Trig_FT	904	MC	03	1	867	0.8519							1.03
2010_Trig_FT	904	MC	04	1	867	1.3059							1.06
2010_Trig_FT	904	MC	05	1	867	-0.1720							1.03
2010_Trig_FT	904	MC	06	1	867	-0.5973							0.90
2010_Trig_FT	904	MC	07	1	867	0.5819							1.01
2010_Trig_FT	904	CR	08	2	867	0.5383	1.0663	-1.0663					1.03
2010_Trig_FT	904	CR	09	4	867	0.4132	1.0881	0.0711	0.1500	-1.3092			1.12
2010_Trig_FT	904	CR	10	2	867	0.3045	0.0570	-0.0570					0.92
2010_Trig_FT	904	CR	11	4	867	0.4423	1.1574	-0.2656	0.1966	-1.0884			0.78

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	905	MC	01	1	868	0.3480							1.02
2010_Trig_FT	905	MC	02	1	868	0.6877							1.01
2010_Trig_FT	905	MC	03	1	868	1.2510							1.07
2010_Trig_FT	905	MC	04	1	868	0.3709							1.04
2010_Trig_FT	905	MC	05	1	868	-0.0688							1.01
2010_Trig_FT	905	MC	06	1	868	-0.4777							1.10
2010_Trig_FT	905	MC	07	1	868	0.1967							1.04
2010_Trig_FT	905	CR	08	2	868	1.3581	0.4650	-0.4650					0.88
2010_Trig_FT	905	CR	09	6	868	0.6565	0.3092	-0.8176	0.1224	0.7777	-1.6329	1.2411	0.75
2010_Trig_FT	905	CR	10	2	868	0.8591	0.4268	-0.4268					1.14
2010_Trig_FT	905	CR	11	2	868	1.3326	0.4595	-0.4595					0.88
2010_Trig_FT	906	MC	01	1	853	-1.8337							0.96
2010_Trig_FT	906	MC	02	1	853	0.5545							0.99
2010_Trig_FT	906	MC	03	1	853	-1.2496							0.96
2010_Trig_FT	906	MC	04	1	853	-1.0983							0.92
2010_Trig_FT	906	MC	05	1	853	0.1845							1.03
2010_Trig_FT	906	MC	06	1	853	0.0993							1.01
2010_Trig_FT	906	MC	07	1	853	-0.4463							1.08
2010_Trig_FT	906	CR	08	4	853	1.0462	1.2054	0.1669	-0.5830	-0.7892			1.02
2010_Trig_FT	906	CR	09	2	853	0.2671	0.7037	-0.7037					1.12
2010_Trig_FT	906	CR	10	4	853	1.0228	2.2020	-0.5845	0.1632	-1.7806			0.92
2010_Trig_FT	906	CR	11	2	853	0.2501	0.3487	-0.3487					1.01
2010_Trig_FT	907	MC	01	1	841	-2.2158							0.93

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	907	MC	02	1	841	-0.4379							0.94
2010_Trig_FT	907	MC	03	1	841	-1.0202							1.02
2010_Trig_FT	907	MC	04	1	841	-0.3263							1.06
2010_Trig_FT	907	MC	05	1	841	0.0864							1.10
2010_Trig_FT	907	MC	06	1	841	0.3862							1.03
2010_Trig_FT	907	MC	07	1	841	-1.4056							1.09
2010_Trig_FT	907	CR	08	2	841	-0.3192	1.1954	-1.1954					0.97
2010_Trig_FT	907	CR	09	2	841	0.7950	-0.0401	0.0401					0.96
2010_Trig_FT	907	CR	10	4	841	0.1697	2.4013	-1.3600	0.5952	-1.6365			0.83
2010_Trig_FT	907	CR	11	4	841	0.9611	-0.4973	0.8862	-2.0748	1.6859			1.02
2010_Trig_FT	908	MC	01	1	840	0.4922							0.99
2010_Trig_FT	908	MC	02	1	840	0.0863							1.11
2010_Trig_FT	908	MC	03	1	840	-0.0595							0.99
2010_Trig_FT	908	MC	04	1	840	0.6995							1.06
2010_Trig_FT	908	MC	05	1	840	0.1689							1.02
2010_Trig_FT	908	MC	06	1	840	-0.7692							1.06
2010_Trig_FT	908	MC	07	1	840	0.1275							1.02
2010_Trig_FT	908	CR	08	2	840	2.3823	0.5281	-0.5281					1.08
2010_Trig_FT	908	CR	09	2	840	0.3921	0.6060	-0.6060					0.86
2010_Trig_FT	908	CR	10	6	840	0.6724	-0.4476	0.4153	0.4883	-0.8363	0.6567	-0.2764	0.79
2010_Trig_FT	908	CR	11	2	840	0.8785	1.1038	-1.1038					1.04
2010_Trig_FT	909	MC	01	1	855	-1.6533							1.01
2010_Trig_FT	909	MC	02	1	855	0.6839							1.09

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	909	MC	03	1	855	0.9049							0.97
2010_Trig_FT	909	MC	04	1	855	1.1105							1.14
2010_Trig_FT	909	MC	05	1	855	0.3686							1.09
2010_Trig_FT	909	MC	06	1	855	-0.4619							1.03
2010_Trig_FT	909	MC	07	1	855	0.3801							1.07
2010_Trig_FT	909	CR	08	2	855	1.5607	-0.1389	0.1389					0.99
2010_Trig_FT	909	CR	09	2	855	0.4586	0.6043	-0.6043					0.83
2010_Trig_FT	909	CR	10	2	855	-0.9122	1.7316	-1.7316					0.87
2010_Trig_FT	909	CR	11	6	855	1.2990	1.9181	-0.7097	-0.0218	-2.0710	1.5717	-0.6873	0.65
2010_Trig_FT	910	MC	01	1	857	-2.5839							1.04
2010_Trig_FT	910	MC	02	1	857	-0.5790							1.19
2010_Trig_FT	910	MC	03	1	857	0.1589							0.96
2010_Trig_FT	910	MC	04	1	857	-1.1017							0.92
2010_Trig_FT	910	MC	05	1	857	0.1644							1.13
2010_Trig_FT	910	MC	06	1	857	0.4713							1.01
2010_Trig_FT	910	MC	07	1	857	0.5971							1.05
2010_Trig_FT	910	CR	08	2	857	0.5779	0.1205	-0.1205					0.87
2010_Trig_FT	910	CR	09	4	857	0.3114	1.1350	-0.8026	-0.0897	-0.2427			0.87
2010_Trig_FT	910	CR	10	2	857	0.1465	0.1070	-0.1070					1.01
2010_Trig_FT	910	CR	11	4	857	2.2298	-1.6465	-1.2221	0.0605	2.8081			0.91
2010_Trig_FT	911	MC	01	1	852	0.0279							1.05
2010_Trig_FT	911	MC	02	1	852	-1.0504							1.11
2010_Trig_FT	911	MC	03	1	852	0.2638							1.11

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	911	MC	04	1	852	-0.1926							1.01
2010_Trig_FT	911	MC	05	1	852	-1.4700							0.96
2010_Trig_FT	911	MC	06	1	852	0.3538							1.02
2010_Trig_FT	911	MC	07	1	852	0.7912							0.99
2010_Trig_FT	911	CR	08	2	852	-0.7595	-0.9014	0.9014					0.96
2010_Trig_FT	911	CR	09	6	852	0.6556	1.3459	-0.7962	-0.4935	-0.3664	0.6042	-0.2940	0.98
2010_Trig_FT	911	CR	10	2	852	1.2088	0.5281	-0.5281					0.92
2010_Trig_FT	911	CR	11	2	852	0.1396	0.4325	-0.4325					0.90
2010_Trig_FT	912	MC	01	1	856	-2.1644							1.00
2010_Trig_FT	912	MC	02	1	856	0.3071							1.08
2010_Trig_FT	912	MC	03	1	856	0.2003							0.95
2010_Trig_FT	912	MC	04	1	856	-1.4688							1.13
2010_Trig_FT	912	MC	05	1	856	0.8884							1.10
2010_Trig_FT	912	MC	06	1	856	0.1006							0.98
2010_Trig_FT	912	MC	07	1	856	-0.7661							1.14
2010_Trig_FT	912	CR	08	4	856	0.4629	-0.6032	-0.0247	-0.2917	0.9196			0.81
2010_Trig_FT	912	CR	09	2	856	-0.1197	2.4354	-2.4354					1.09
2010_Trig_FT	912	CR	10	4	856	0.5651	0.7438	-0.4425	-0.4057	0.1044			0.91
2010_Trig_FT	912	CR	11	2	856	0.8703	0.4430	-0.4430					0.87
2010_Trig_FT	913	MC	01	1	855	-1.8826							0.98
2010_Trig_FT	913	MC	02	1	855	1.3098							1.06
2010_Trig_FT	913	MC	03	1	855	1.7316							0.99
2010_Trig_FT	913	MC	04	1	855	0.1969							1.00

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	913	MC	05	1	855	-0.0671							1.20
2010_Trig_FT	913	MC	06	1	855	0.0720							0.97
2010_Trig_FT	913	MC	07	1	855	0.1369							0.96
2010_Trig_FT	913	CR	08	2	855	-1.0329	1.0195	-1.0195					0.87
2010_Trig_FT	913	CR	09	2	855	0.9604	0.4452	-0.4452					0.93
2010_Trig_FT	913	CR	10	4	855	1.0967	1.5685	-2.8431	2.0524	-0.7778			1.11
2010_Trig_FT	913	CR	11	4	855	0.6739	0.4592	-0.1121	0.9337	-1.2809			0.91
2010_Trig_FT	914	MC	01	1	860	0.1485							1.00
2010_Trig_FT	914	MC	02	1	860	0.7682							1.01
2010_Trig_FT	914	MC	03	1	860	-0.2093							1.02
2010_Trig_FT	914	MC	04	1	860	0.6200							1.17
2010_Trig_FT	914	MC	05	1	860	-2.8622							1.01
2010_Trig_FT	914	MC	06	1	860	-0.0661							1.04
2010_Trig_FT	914	MC	07	1	860	0.4093							1.06
2010_Trig_FT	914	CR	08	2	860	0.3166	-0.6457	0.6457					0.88
2010_Trig_FT	914	CR	09	2	860	0.2631	-0.0529	0.0529					0.96
2010_Trig_FT	914	CR	10	6	860	0.6984	0.4535	-0.0857	-0.1808	-0.1813	-0.3482	0.3426	0.75
2010_Trig_FT	914	CR	11	2	860	1.4798	-0.9831	0.9831					1.03
2010_Trig_FT	915	MC	01	1	845	0.5532							1.00
2010_Trig_FT	915	MC	02	1	845	-0.8276							0.92
2010_Trig_FT	915	MC	03	1	845	1.6556							1.20
2010_Trig_FT	915	MC	04	1	845	-0.3182							1.10
2010_Trig_FT	915	MC	05	1	845	0.8578							0.94

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	915	MC	06	1	845	-0.9493							1.04
2010_Trig_FT	915	MC	07	1	845	1.6660							1.00
2010_Trig_FT	915	CR	08	2	845	0.8183	-0.1124	0.1124					0.84
2010_Trig_FT	915	CR	09	2	845	0.9281	0.1399	-0.1399					0.95
2010_Trig_FT	915	CR	10	4	845	0.4469	-0.4279	-0.3761	0.7744	0.0295			1.03
2010_Trig_FT	915	CR	11	4	845	1.1146	0.7946	-0.3886	-0.1852	-0.2208			1.00
2010_Trig_FT	916	MC	01	1	842	-0.4838							1.16
2010_Trig_FT	916	MC	02	1	842	-0.7540							1.05
2010_Trig_FT	916	MC	03	1	842	-0.0800							0.94
2010_Trig_FT	916	MC	04	1	842	-0.7540							1.16
2010_Trig_FT	916	MC	05	1	842	-1.0327							0.90
2010_Trig_FT	916	MC	06	1	842	0.9288							1.10
2010_Trig_FT	916	MC	07	1	842	-0.7597							0.96
2010_Trig_FT	916	CR	08	2	842	-0.0429	-0.0317	0.0317					1.17
2010_Trig_FT	916	CR	09	2	842	0.3122	0.5362	-0.5362					0.87
2010_Trig_FT	916	CR	10	6	842	0.5974	1.4359	-1.2791	0.0793	-0.4343	0.5246	-0.3264	0.74
2010_Trig_FT	916	CR	11	2	842	-0.4392	0.8215	-0.8215					0.85
2010_Trig_FT	917	MC	01	1	854	-0.3855							1.05
2010_Trig_FT	917	MC	02	1	854	-0.4087							1.27
2010_Trig_FT	917	MC	03	1	854	0.4912							0.93
2010_Trig_FT	917	MC	04	1	854	-1.4994							1.03
2010_Trig_FT	917	MC	05	1	854	0.1264							0.99
2010_Trig_FT	917	MC	06	1	854	1.2339							1.05

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	917	MC	07	1	854	-0.5308							0.92
2010_Trig_FT	917	CR	08	2	854	0.1277	-0.2768	0.2768					0.94
2010_Trig_FT	917	CR	09	2	854	0.9440	0.3637	-0.3637					1.13
2010_Trig_FT	917	CR	10	2	854	0.6138	-0.2055	0.2055					0.85
2010_Trig_FT	917	CR	11	6	854	1.1728	1.3611	-0.5897	0.1298	-0.5063	0.6900	-1.0849	0.72
2010_Trig_FT	918	MC	01	1	859	-1.3039							0.97
2010_Trig_FT	918	MC	02	1	859	-0.4588							1.03
2010_Trig_FT	918	MC	03	1	859	0.2767							1.11
2010_Trig_FT	918	MC	04	1	859	-0.8230							0.98
2010_Trig_FT	918	MC	05	1	859	-0.0502							0.96
2010_Trig_FT	918	MC	06	1	859	0.3556							1.07
2010_Trig_FT	918	MC	07	1	859	1.0072							1.21
2010_Trig_FT	918	CR	08	2	859	0.6454	0.4309	-0.4309					1.07
2010_Trig_FT	918	CR	09	4	859	0.5730	0.3234	-0.7117	0.3511	0.0372			0.81
2010_Trig_FT	918	CR	10	2	859	1.1038	0.5188	-0.5188					0.75
2010_Trig_FT	918	CR	11	4	859	1.3924	1.2727	-1.6750	-0.0787	0.4810			1.06
2010_Trig_FT	919	MC	01	1	858	-0.6861							0.98
2010_Trig_FT	919	MC	02	1	858	0.4089							1.09
2010_Trig_FT	919	MC	03	1	858	-0.2072							0.87
2010_Trig_FT	919	MC	04	1	858	-1.0241							1.03
2010_Trig_FT	919	MC	05	1	858	0.5382							1.11
2010_Trig_FT	919	MC	06	1	858	1.0617							1.04
2010_Trig_FT	919	MC	07	1	858	-1.1160							1.00

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	919	CR	08	2	858	1.1906	0.5302	-0.5302					1.04
2010_Trig_FT	919	CR	09	6	858	1.5817	1.4869	-0.4488	-1.0850	1.3634	-0.9060	-0.4104	0.81
2010_Trig_FT	919	CR	10	2	858	0.3826	0.5041	-0.5041					0.89
2010_Trig_FT	919	CR	11	2	858	1.0376	0.0925	-0.0925					1.02
2010_Trig_FT	920	MC	01	1	865	-0.6654							1.09
2010_Trig_FT	920	MC	02	1	865	-1.5055							0.94
2010_Trig_FT	920	MC	03	1	865	0.4638							0.96
2010_Trig_FT	920	MC	04	1	865	0.1434							1.02
2010_Trig_FT	920	MC	05	1	865	0.6808							1.01
2010_Trig_FT	920	MC	06	1	865	-0.4570							0.95
2010_Trig_FT	920	MC	07	1	865	-0.0129							0.99
2010_Trig_FT	920	CR	08	4	865	1.0293	0.4096	-1.2745	1.4237	-0.5589			1.05
2010_Trig_FT	920	CR	09	2	865	-0.1364	0.9102	-0.9102					0.95
2010_Trig_FT	920	CR	10	4	865	-0.0480	1.9197	-1.1563	-0.0203	-0.7431			1.10
2010_Trig_FT	920	CR	11	2	865	0.9830	-0.4370	0.4370					0.96
2010_Trig_FT	921	MC	01	1	840	-0.2049							1.06
2010_Trig_FT	921	MC	02	1	840	-0.0955							0.95
2010_Trig_FT	921	MC	03	1	840	-0.2267							0.93
2010_Trig_FT	921	MC	04	1	840	-0.6569							1.14
2010_Trig_FT	921	MC	05	1	840	0.2783							0.99
2010_Trig_FT	921	MC	06	1	840	-0.2540							1.02
2010_Trig_FT	921	MC	07	1	840	-0.0571							1.07
2010_Trig_FT	921	CR	08	2	840	0.8218	0.5186	-0.5186					0.94

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	921	CR	09	2	840	1.0079	0.7382	-0.7382					0.99
2010_Trig_FT	921	CR	10	4	840	0.3916	0.9707	-0.2616	-0.2980	-0.4110			0.85
2010_Trig_FT	921	CR	11	4	840	0.6873	0.5425	-1.0424	1.1725	-0.6726			1.11
2010_Trig_FT	922	MC	01	1	840	-0.6704							0.98
2010_Trig_FT	922	MC	02	1	840	-0.5823							0.94
2010_Trig_FT	922	MC	03	1	840	-0.6881							1.21
2010_Trig_FT	922	MC	04	1	840	-2.0229							1.13
2010_Trig_FT	922	MC	05	1	840	-1.3350							1.00
2010_Trig_FT	922	MC	06	1	840	-0.6586							0.92
2010_Trig_FT	922	MC	07	1	840	0.3758							0.95
2010_Trig_FT	922	CR	08	2	840	0.9767	0.3307	-0.3307					1.11
2010_Trig_FT	922	CR	09	2	840	-0.0317	-0.1969	0.1969					1.07
2010_Trig_FT	922	CR	10	6	840	1.0817	0.6736	-0.5844	-0.8580	-0.3198	-1.5110	2.5996	0.74
2010_Trig_FT	922	CR	11	2	840	1.4032	0.3276	-0.3276					0.89
2010_Trig_FT	923	MC	01	1	847	-0.9042							0.94
2010_Trig_FT	923	MC	02	1	847	0.1723							1.12
2010_Trig_FT	923	MC	03	1	847	-0.5619							1.01
2010_Trig_FT	923	MC	04	1	847	1.2821							1.13
2010_Trig_FT	923	MC	05	1	847	-1.2739							0.96
2010_Trig_FT	923	MC	06	1	847	0.7801							1.00
2010_Trig_FT	923	MC	07	1	847	-0.2151							1.09
2010_Trig_FT	923	CR	08	2	847	0.1707	0.4933	-0.4933					0.87
2010_Trig_FT	923	CR	09	2	847	0.8112	0.5560	-0.5560					0.98

Table 9. Partial Credit Model Item Analysis (continued)

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2010_Trig_FT	923	CR	10	2	847	0.8135	0.7443	-0.7443					1.13
2010_Trig_FT	923	CR	11	6	847	0.5741	1.4816	-0.7209	-0.6039	1.6793	-1.2355	-0.6005	0.74
2010_Trig_FT	924	MC	01	1	842	-2.4484							1.06
2010_Trig_FT	924	MC	02	1	842	-0.0910							1.11
2010_Trig_FT	924	MC	03	1	842	-0.1413							1.11
2010_Trig_FT	924	MC	04	1	842	0.1230							1.05
2010_Trig_FT	924	MC	05	1	842	-0.1133							1.02
2010_Trig_FT	924	MC	06	1	842	-0.2755							1.00
2010_Trig_FT	924	MC	07	1	842	-1.7652							0.91
2010_Trig_FT	924	CR	08	2	842	0.7119	-0.3846	0.3846					0.93
2010_Trig_FT	924	CR	09	4	842	0.3774	1.0731	-1.3878	0.9266	-0.6118			0.73
2010_Trig_FT	924	CR	10	2	842	1.3345	0.2640	-0.2640					0.93
2010_Trig_FT	924	CR	11	4	842	1.2265	2.4578	-1.5269	0.4897	-1.4206			1.09
2010_Trig_FT	925	MC	01	1	833	-0.2048							1.07
2010_Trig_FT	925	MC	02	1	833	-1.1656							0.98
2010_Trig_FT	925	MC	03	1	833	0.4366							0.92
2010_Trig_FT	925	MC	04	1	833	-0.1993							1.00
2010_Trig_FT	925	MC	05	1	833	0.4246							1.13
2010_Trig_FT	925	MC	06	1	833	0.1571							0.99
2010_Trig_FT	925	MC	07	1	833	-0.2654							0.93
2010_Trig_FT	925	CR	08	4	833	1.0545	0.2304	-0.1706	0.7331	-0.7928			1.24
2010_Trig_FT	925	CR	09	4	833	-0.2105	2.2036	-1.7210	-0.0837	-0.3989			0.89
2010_Trig_FT	925	CR	10	2	833	0.3120	0.2943	-0.2943					0.87
2010_Trig_FT	925	CR	11	2	833	0.5617	0.6409	-0.6409					1.03

Appendix C: DIF Statistics

Table 10. DIF Statistics

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
901	1	MC	-0.70	3.93	-0.16		
901	2	MC	-0.98	5.59	-0.15		
901	3	MC	-0.30	0.59	-0.06		
901	4	MC	-0.33	0.94	-0.07		
901	5	MC	-0.21	0.34	-0.03		
901	6	MC	0.29	0.59	0.05		
901	7	MC	0.54	2.10	0.10		
901	8	OE		0.69	-0.06		
901	9	OE		8.01	0.18	BB	F
901	10	OE		0.17	0.04		
901	11	OE		0.03	0.00		
902	1	MC	-0.73	3.99	-0.11		
902	2	MC	-1.23	13.12	-0.25	B	M
902	3	MC	-0.12	0.12	-0.01		
902	4	MC	0.04	0.01	0.00		
902	5	MC	0.76	4.50	0.12		
902	6	MC	0.15	0.17	0.03		
902	7	MC	0.02	0.00	0.03		
902	8	OE		0.01	-0.01		
902	9	OE		1.48	0.04		
902	10	OE		0.44	-0.05		
902	11	OE		1.11	0.06		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
903	1	MC	0.10	0.08	0.02		
903	2	MC	-0.25	0.45	-0.04		
903	3	MC	0.43	1.45	0.07		
903	4	MC	-0.58	1.32	-0.07		
903	5	MC	-0.57	1.31	-0.07		
903	6	MC	0.31	0.74	0.05		
903	7	MC	0.13	0.12	0.03		
903	8	OE		1.95	-0.07		
903	9	OE		0.38	0.04		
903	10	OE		0.14	0.02		
903	11	OE		0.01	-0.02		
904	1	MC	-0.77	3.79	-0.13		
904	2	MC	-0.17	0.21	-0.01		
904	3	MC	0.05	0.02	0.00		
904	4	MC	0.00	0.00	0.00		
904	5	MC	-0.68	3.65	-0.10		
904	6	MC	-1.08	7.58	-0.17	B	M
904	7	MC	-0.24	0.41	-0.03		
904	8	OE		0.50	0.03		
904	9	OE		0.16	-0.01		
904	10	OE		0.34	0.03		
904	11	OE		8.48	0.12		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
905	1	MC	-0.60	2.68	-0.11		
905	2	MC	0.67	2.97	0.11		
905	3	MC	-0.77	3.20	-0.11		
905	4	MC	-0.79	4.78	-0.15		
905	5	MC	-0.11	0.09	-0.02		
905	6	MC	0.29	0.72	0.05		
905	7	MC	-0.46	1.69	-0.09		
905	8	OE		0.05	0.01		
905	9	OE		3.05	0.07		
905	10	OE		0.06	-0.03		
905	11	OE		0.25	0.03		
906	1	MC	0.76	2.81	0.10		
906	2	MC	-0.35	0.80	-0.05		
906	3	MC	-0.16	0.16	-0.02		
906	4	MC	0.49	1.44	0.07		
906	5	MC	-0.12	0.10	-0.01		
906	6	MC	-0.42	1.26	-0.08		
906	7	MC	-0.40	1.24	-0.08		
906	8	OE		0.93	0.04		
906	9	OE		0.65	-0.05		
906	10	OE		1.15	-0.04		
906	11	OE		3.37	0.10		
907	1	MC	-0.47	0.84	-0.06		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
907	2	MC	-0.63	2.66	-0.11		
907	3	MC	0.19	0.26	0.04		
907	4	MC	0.76	4.48	0.15		
907	5	MC	-0.25	0.51	-0.04		
907	6	MC	-0.51	1.82	-0.10		
907	7	MC	-0.22	0.32	-0.03		
907	8	OE		0.10	0.02		
907	9	OE		0.56	-0.03		
907	10	OE		2.82	0.05		
907	11	OE		0.44	-0.02		
908	1	MC	-0.90	5.33	-0.16		
908	2	MC	0.17	0.23	0.03		
908	3	MC	0.02	0.00	0.00		
908	4	MC	0.01	0.00	0.01		
908	5	MC	0.01	0.00	0.01		
908	6	MC	0.47	1.64	0.07		
908	7	MC	0.24	0.43	0.06		
908	8	OE		0.87	-0.03		
908	9	OE		0.09	-0.02		
908	10	OE		0.89	0.04		
908	11	OE		1.01	-0.06		
909	1	MC	0.02	0.00	0.00		
909	2	MC	-0.13	0.13	-0.04		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
909	3	MC	-0.37	0.82	-0.06		
909	4	MC	0.09	0.05	0.04		
909	5	MC	0.11	0.10	0.04		
909	6	MC	-0.04	0.01	0.00		
909	7	MC	-0.23	0.39	-0.06		
909	8	OE		10.05	-0.18	BB	M
909	9	OE		0.05	-0.02		
909	10	OE		2.36	0.08		
909	11	OE		3.37	0.08		
910	1	MC	-0.15	0.08	-0.02		
910	2	MC	0.36	1.09	0.06		
910	3	MC	-0.64	2.94	-0.12		
910	4	MC	0.39	1.01	0.08		
910	5	MC	-0.25	0.50	-0.05		
910	6	MC	-0.50	1.71	-0.09		
910	7	MC	-0.02	0.00	0.00		
910	8	OE		0.00	0.01		
910	9	OE		2.71	0.07		
910	10	OE		0.01	0.01		
910	11	OE		2.14	-0.08		
911	1	MC	-0.84	5.67	-0.17		
911	2	MC	0.57	2.36	0.09		
911	3	MC	0.68	3.77	0.13		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
911	4	MC	-0.38	1.16	-0.06		
911	5	MC	-0.37	0.78	-0.06		
911	6	MC	0.47	1.61	0.09		
911	7	MC	-0.22	0.30	-0.03		
911	8	OE		6.25	0.15		
911	9	OE		2.39	-0.07		
911	10	OE		0.28	-0.03		
911	11	OE		1.14	0.06		
912	1	MC	-0.52	1.23	-0.05		
912	2	MC	-0.82	5.23	-0.15		
912	3	MC	-0.11	0.09	-0.03		
912	4	MC	-1.24	10.07	-0.21	B	M
912	5	MC	0.16	0.18	0.03		
912	6	MC	-0.66	3.16	-0.11		
912	7	MC	0.33	0.89	0.08		
912	8	OE		1.45	0.07		
912	9	OE		0.31	-0.02		
912	10	OE		3.39	0.08		
912	11	OE		1.47	0.06		
913	1	MC	0.29	0.43	0.04		
913	2	MC	-0.59	1.86	-0.08		
913	3	MC	-0.10	0.04	-0.01		
913	4	MC	-0.75	4.33	-0.14		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
913	5	MC	-0.15	0.20	-0.03		
913	6	MC	-0.37	1.05	-0.06		
913	7	MC	0.18	0.26	0.03		
913	8	OE		1.07	0.06		
913	9	OE		0.16	-0.01		
913	10	OE		0.08	-0.01		
913	11	OE		2.87	0.07		
914	1	MC	0.52	1.98	0.10		
914	2	MC	-0.55	2.03	-0.10		
914	3	MC	-0.08	0.05	-0.01		
914	4	MC	0.15	0.17	0.02		
914	5	MC	0.04	0.01	0.01		
914	6	MC	-0.62	3.22	-0.12		
914	7	MC	0.01	0.00	-0.03		
914	8	OE		0.05	-0.01		
914	9	OE		0.00	0.01		
914	10	OE		0.01	0.00		
914	11	OE		3.26	0.10		
915	1	MC	-0.83	4.71	-0.10		
915	2	MC	-0.42	1.22	-0.03		
915	3	MC	0.10	0.05	0.02		
915	4	MC	-0.04	0.01	0.00		
915	5	MC	0.09	0.04	0.05		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
915	6	MC	-0.35	0.93	-0.04		
915	7	MC	-0.51	0.99	-0.04		
915	8	OE		0.40	0.00		
915	9	OE		0.19	0.01		
915	10	OE		1.17	0.08		
915	11	OE		4.40	0.13		
916	1	MC	-0.82	5.83	-0.16		
916	2	MC	-0.52	2.10	-0.08		
916	3	MC	0.29	0.63	0.06		
916	4	MC	-0.03	0.01	0.01		
916	5	MC	0.48	1.40	0.09		
916	6	MC	-0.50	1.65	-0.06		
916	7	MC	0.47	1.57	0.09		
916	8	OE		0.44	0.06		
916	9	OE		4.04	0.13		
916	10	OE		0.60	-0.01		
916	11	OE		0.00	0.01		
917	1	MC	-0.48	1.71	-0.08		
917	2	MC	0.49	2.05	0.09		
917	3	MC	-0.55	1.83	-0.07		
917	4	MC	-1.18	8.26	-0.18	B	M
917	5	MC	-0.07	0.03	-0.01		
917	6	MC	-1.66	14.67	-0.24	C	M

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
917	7	MC	0.46	1.31	0.07		
917	8	OE		5.50	0.13		
917	9	OE		2.88	-0.11		
917	10	OE		3.38	0.10		
917	11	OE		2.24	0.04		
918	1	MC	-0.80	3.99	-0.12		
918	2	MC	-0.16	0.21	-0.03		
918	3	MC	-0.38	1.17	-0.08		
918	4	MC	0.22	0.34	0.03		
918	5	MC	-0.17	0.20	-0.02		
918	6	MC	0.17	0.22	0.04		
918	7	MC	0.17	0.18	0.04		
918	8	OE		0.00	0.00		
918	9	OE		3.54	0.08		
918	10	OE		0.26	-0.03		
918	11	OE		0.15	-0.02		
919	1	MC	0.11	0.10	0.03		
919	2	MC	0.52	2.03	0.09		
919	3	MC	0.76	3.66	0.13		
919	4	MC	-0.21	0.31	-0.02		
919	5	MC	0.17	0.22	0.04		
919	6	MC	0.28	0.46	0.05		
919	7	MC	-0.87	5.01	-0.13		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
919	8	OE		1.07	-0.04		
919	9	OE		0.21	0.04		
919	10	OE		1.17	-0.04		
919	11	OE		0.06	0.02		
920	1	MC	-1.03	8.77	-0.19	B	M
920	2	MC	-0.62	2.18	-0.10		
920	3	MC	0.36	0.90	0.06		
920	4	MC	0.05	0.02	0.01		
920	5	MC	-1.05	7.29	-0.16	B	M
920	6	MC	-0.71	3.83	-0.13		
920	7	MC	0.19	0.26	0.02		
920	8	OE		1.13	0.06		
920	9	OE		1.09	0.06		
920	10	OE		3.45	0.10		
920	11	OE		1.48	-0.09		
921	1	MC	0.49	1.90	0.09		
921	2	MC	0.34	0.86	0.06		
921	3	MC	0.11	0.08	0.03		
921	4	MC	0.10	0.08	0.01		
921	5	MC	-0.23	0.37	-0.03		
921	6	MC	-0.19	0.27	-0.04		
921	7	MC	0.28	0.62	0.04		
921	8	OE		0.59	-0.03		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
921	9	OE		0.02	-0.02		
921	10	OE		0.50	-0.04		
921	11	OE		0.00	0.01		
922	1	MC	-0.58	2.36	-0.07		
922	2	MC	-0.58	2.24	-0.07		
922	3	MC	0.89	6.54	0.19		
922	4	MC	0.07	0.03	0.04		
922	5	MC	-0.02	0.00	0.03		
922	6	MC	0.28	0.53	0.08		
922	7	MC	0.32	0.65	0.08		
922	8	OE		1.28	0.09		
922	9	OE		0.41	0.00		
922	10	OE		0.01	0.03		
922	11	OE		2.36	-0.04		
923	1	MC	0.14	0.13	0.00		
923	2	MC	-0.61	3.11	-0.09		
923	3	MC	-0.41	1.23	-0.05		
923	4	MC	0.15	0.12	0.04		
923	5	MC	-0.34	0.71	-0.04		
923	6	MC	0.45	1.22	0.06		
923	7	MC	0.06	0.03	0.01		
923	8	OE		0.40	-0.03		
923	9	OE		0.23	0.02		

Table 10. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
923	10	OE		12.02	-0.22	BB	M
923	11	OE		8.96	0.10		
924	1	MC	0.24	0.23	0.04		
924	2	MC	-0.52	2.18	-0.09		
924	3	MC	-0.18	0.26	-0.04		
924	4	MC	-0.23	0.42	-0.04		
924	5	MC	0.35	0.93	0.07		
924	6	MC	-0.75	4.18	-0.10		
924	7	MC	0.12	0.06	0.02		
924	8	OE		0.02	0.01		
924	9	OE		0.32	0.03		
924	10	OE		0.02	-0.02		
924	11	OE		1.93	0.08		
925	1	MC	-0.42	1.41	-0.08		
925	2	MC	-0.29	0.55	-0.04		
925	3	MC	-0.37	0.84	-0.07		
925	4	MC	1.27	11.80	0.22	B	F
925	5	MC	-0.01	0.00	-0.01		
925	6	MC	0.14	0.14	0.02		
925	7	MC	0.40	1.13	0.06		
925	8	OE		0.75	0.05		
925	9	OE		0.38	-0.02		

Table 11. DIF Statistics (continued)

Form	Item	Item Type	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
925	10	OE		0.74	0.05		
925	11	OE		5.17	-0.14		

*DIF Category meanings: A/AA=negligible, B/BB=moderate, C/CC=large

Appendix D: Operational Test Maps

Table 12. Operational Test Map for June 2010

Position	Item Type	Max Points	Weight	Strand	Mean	Point-Biserial	Rasch	S1	S2	S3	S4	S5	S6
1	MC	1	2	Algebra	0.84	0.10	-2.04						
2	MC	1	2	Measurement	0.81	0.41	-1.96						
3	MC	1	2	Algebra	0.72	0.41	-1.39						
4	MC	1	2	Algebra	0.68	0.46	-1.09						
5	MC	1	2	Algebra	0.67	0.37	-1.08						
6	MC	1	2	Number Sense and Operations	0.64	0.51	-1.02						
7	MC	1	2	Statistics and Probability	0.63	0.04	-0.91						
8	MC	1	2	Algebra	0.61	0.46	-0.83						
9	MC	1	2	Algebra	0.54	0.46	-0.52						
10	MC	1	2	Algebra	0.59	0.47	-0.73						
11	MC	1	2	Algebra	0.54	0.41	-0.49						
12	MC	1	2	Number Sense and Operations	0.54	0.46	-0.47						
13	MC	1	2	Algebra	0.49	0.41	-0.34						
14	MC	1	2	Algebra	0.51	0.32	-0.35						
15	MC	1	2	Algebra	0.52	0.48	-0.41						
16	MC	1	2	Algebra	0.41	0.34	0.14						
17	MC	1	2	Algebra	0.44	0.35	-0.02						
18	MC	1	2	Algebra	0.43	0.20	0.02						
19	MC	1	2	Number Sense and Operations	0.42	0.36	0.06						

Table 11. Operational Test Map for June 2010 (continued)

Position	Item Type	Max Points	Weight	Strand	Mean	Point-Biserial	Rasch	S1	S2	S3	S4	S5	S6
20	MC	1	2	Algebra	0.39	0.37	0.20						
21	MC	1	2	Statistics and Probability	0.33	0.29	0.49						
22	MC	1	2	Algebra	0.28	0.21	0.73						
23	MC	1	2	Algebra	0.26	0.30	0.86						
24	MC	1	2	Algebra	0.25	0.22	0.92						
25	MC	1	2	Algebra	0.32	0.36	0.50						
26	MC	1	2	Algebra	0.22	0.30	1.10						
27	MC	1	2	Algebra	0.28	0.30	0.77						
28	CR	2	1	Algebra	0.39	0.51	1.05	0.28	-0.28				
29	CR	2	1	Statistics and Probability	0.77	0.45	0.08	1.64	-1.64				
30	CR	2	1	Algebra	0.69	0.56	0.27	0.79	-0.79				
31	CR	2	1	Algebra	0.68	0.51	0.69	-1.56	1.56				
32	CR	2	1	Number Sense and Operations	0.65	0.49	0.46	-0.39	0.39				
33	CR	2	1	Algebra	0.97	0.54	-0.24	-1.17	1.17				
34	CR	2	1	Algebra	0.60	0.55	0.35	1.08	-1.08				
35	CR	2	1	Algebra	1.04	0.60	-0.37	1.24	-1.24				
36	CR	4	1	Statistics and Probability	1.02	0.59	0.45	1.49	-0.88	-0.02	-0.59		
37	CR	4	1	Algebra	0.27	0.49	1.57	1.32	-1.47	1.14	-1.00		
38	CR	4	1	Statistics and Probability	0.68	0.52	0.90	0.74	-1.25	1.35	-0.84		
39	CR	6	1	Algebra	1.72	0.71	0.37	0.51	1.38	-1.77	0.46	-0.83	0.25

Table 13. Operational Test Map for August 2010

Position	Item Type	Max Points	Weight	Strand	Mean	Point-Biserial	Rasch	S1	S2	S3	S4	S5	S6
1	MC	1	2	Number Sense and Operations	0.79	0.42	-1.72						
2	MC	1	2	Measurement	0.71	0.40	-1.36						
3	MC	1	2	Algebra	0.71	0.39	-1.30						
4	MC	1	2	Number Sense and Operations	0.70	0.45	-1.32						
5	MC	1	2	Algebra	0.68	0.40	-1.14						
6	MC	1	2	Algebra	0.67	0.42	-1.12						
7	MC	1	2	Algebra	0.63	0.39	-0.93						
8	MC	1	2	Algebra	0.64	0.49	-1.03						
9	MC	1	2	Algebra	0.63	0.48	-1.01						
10	MC	1	2	Algebra	0.63	0.42	-0.99						
11	MC	1	2	Algebra	0.58	0.42	-0.69						
12	MC	1	2	Statistics and Probability	0.58	0.36	-0.65						
13	MC	1	2	Statistics and Probability	0.50	0.36	-0.31						
14	MC	1	2	Algebra	0.49	0.34	-0.26						
15	MC	1	2	Algebra	0.47	0.46	-0.18						
16	MC	1	2	Algebra	0.46	0.43	-0.19						
17	MC	1	2	Algebra	0.44	0.45	-0.04						
18	MC	1	2	Algebra	0.44	0.34	-0.06						
19	MC	1	2	Algebra	0.42	0.36	0.06						
20	MC	1	2	Algebra	0.42	0.35	0.02						
21	MC	1	2	Algebra	0.41	0.32	0.10						

Table 12. Operational Test Map for August 2010 (continued)

Position	Item Type	Max Points	Weight	Strand	Mean	Point-Biserial	Rasch	S1	S2	S3	S4	S5	S6
22	MC	1	2	Algebra	0.40	0.30	0.14						
23	MC	1	2	Algebra	0.34	0.32	0.45						
24	MC	1	2	Number Sense and Operations	0.32	0.35	0.53						
25	MC	1	2	Algebra	0.28	0.18	0.75						
26	MC	1	2	Algebra	0.20	0.25	1.24						
27	MC	1	2	Algebra	0.16	0.30	1.53						
28	CR	2	1	Algebra	0.63	0.45	0.46	-0.35	0.35				
29	CR	2	1	Algebra	0.28	0.41	1.55	-0.35	0.35				
30	CR	2	1	Statistics and Probability	1.44	0.46	-1.19	-0.03	0.03				
31	CR	2	1	Statistics and Probability	0.77	0.56	0.10	0.98	-0.98				
32	CR	2	1	Algebra	0.58	0.56	0.41	0.98	-0.98				
33	CR	2	1	Algebra	0.19	0.42	1.65	0.85	-0.85				
34	CR	2	1	Number Sense and Operations	1.04	0.63	-0.37	0.68	-0.68				
35	CR	2	1	Statistics and Probability	0.39	0.39	1.28	-0.67	0.67				
36	CR	4	1	Algebra	0.84	0.64	0.70	0.98	-0.78	0.25	-0.45		
37	CR	4	1	Algebra	1.19	0.68	0.32	0.89	-0.06	-0.30	-0.52		
38	CR	4	1	Statistics and Probability	0.68	0.53	0.76	1.68	-1.13	-0.04	-0.51		
39	CR	6	1	Algebra	1.14	0.66	0.75	4.20	-4.13	0.51	1.40	-0.93	-1.05

Appendix E: Scoring Tables

Table 14. Scoring Tables for June 2010 – Base Scale

Raw Score	Ability	Scale Score		Raw Score	Ability	Scale Score		Raw Score	Ability	Scale Score		Raw Score	Ability	Scale Score
0	-5.638	0.0		23	-0.998	34.4		46	0.214	65.0		69	1.350	88.4
1	-4.896	1.5		24	-0.928	35.9		47	0.256	66.2		70	1.420	89.2
2	-4.154	3.1		25	-0.861	37.3		48	0.298	67.4		71	1.493	90.0
3	-3.702	4.6		26	-0.796	38.7		49	0.340	68.5		72	1.570	90.8
4	-3.370	6.1		27	-0.733	40.1		50	0.382	69.7		73	1.651	91.5
5	-3.105	7.6		28	-0.672	41.5		51	0.424	70.8		74	1.737	92.2
6	-2.882	9.2		29	-0.612	42.9		52	0.467	71.9		75	1.828	92.9
7	-2.689	10.7		30	-0.554	44.3		53	0.510	73.0		76	1.925	93.6
8	-2.518	12.2		31	-0.497	45.7		54	0.553	74.1		77	2.029	94.3
9	-2.364	13.7		32	-0.442	47.0		55	0.597	75.2		78	2.141	94.9
10	-2.224	15.2		33	-0.389	48.4		56	0.642	76.3		79	2.263	95.5
11	-2.094	16.7		34	-0.336	49.7		57	0.688	77.3		80	2.397	96.1
12	-1.974	18.2		35	-0.285	51.1		58	0.735	78.3		81	2.546	96.7
13	-1.862	19.7		36	-0.235	52.4		59	0.783	79.3		82	2.715	97.2
14	-1.756	21.2		37	-0.187	53.7		60	0.832	80.3		83	2.911	97.7
15	-1.655	22.7		38	-0.139	55.0		61	0.882	81.3		84	3.146	98.2
16	-1.560	24.2		39	-0.092	56.3		62	0.934	82.2		85	3.444	98.7
17	-1.470	25.7		40	-0.047	57.6		63	0.987	83.2		86	3.858	99.2
18	-1.383	27.2		41	-0.002	58.8		64	1.042	84.1		87	4.558	99.6
19	-1.300	28.6		42	0.042	60.1		65	1.099	85.0		88	5.257	100.0
20	-1.220	30.1		43	0.086	61.3		66	1.158	85.9				
21	-1.143	31.5		44	0.129	62.6		67	1.220	86.7				
22	-1.069	33.0		45	0.172	63.8		68	1.284	87.6				

Table 15. Scoring Tables for August 2010

Raw Score	Ability	Scale Score	Raw Score	Ability	Scale Score	Raw Score	Ability	Scale Score	Raw Score	Ability	Scale Score
0	-5.3825	0.517	23	-0.9937	34.492	46	0.2470	65.941	69	1.2263	86.788
1	-4.6665	1.995	24	-0.9252	35.958	47	0.2889	67.139	70	1.2851	87.614
2	-3.9505	3.775	25	-0.8585	37.354	48	0.3302	68.243	71	1.3477	88.373
3	-3.5221	5.413	26	-0.7934	38.758	49	0.3710	69.385	72	1.4146	89.139
4	-3.2114	6.998	27	-0.7298	40.174	50	0.4112	70.466	73	1.4863	89.926
5	-2.9650	8.604	28	-0.6677	41.601	51	0.4511	71.493	74	1.5633	90.730
6	-2.7593	10.153	29	-0.6070	43.022	52	0.4906	72.503	75	1.6463	91.459
7	-2.5817	11.641	30	-0.5476	44.457	53	0.5298	73.506	76	1.7361	92.192
8	-2.4245	13.111	31	-0.4895	45.877	54	0.5688	74.494	77	1.8335	92.940
9	-2.2829	14.569	32	-0.4327	47.244	55	0.6077	75.461	78	1.9399	93.700
10	-2.1535	16.013	33	-0.3772	48.689	56	0.6466	76.400	79	2.0568	94.449
11	-2.0340	17.450	34	-0.3229	50.061	57	0.6856	77.248	80	2.1863	95.123
12	-1.9226	18.888	35	-0.2697	51.498	58	0.7249	78.085	81	2.3317	95.808
13	-1.8181	20.322	36	-0.2177	52.868	59	0.7645	78.915	82	2.4977	96.505
14	-1.7192	21.746	37	-0.1668	54.246	60	0.8047	79.743	83	2.6917	97.131
15	-1.6253	23.168	38	-0.1170	55.607	61	0.8456	80.572	84	2.9262	97.732
16	-1.5358	24.604	39	-0.0683	56.984	62	0.8874	81.394	85	3.2250	98.332
17	-1.4499	26.047	40	-0.0206	58.304	63	0.9303	82.137	86	3.6412	98.938
18	-1.3674	27.463	41	0.0262	59.632	64	0.9746	82.966	87	4.3450	99.478
19	-1.2878	28.829	42	0.0720	60.917	65	1.0205	83.748	88	5.0488	99.881
20	-1.2109	30.266	43	0.1169	62.234	66	1.0683	84.515			
21	-1.1364	31.635	44	0.1610	63.494	67	1.1183	85.294			
22	-1.0640	33.098	45	0.2043	64.724	68	1.1708	86.065			