

# **New York State Regents Examination in Algebra I (Common Core)**

## **2013 Field Test Analysis, Equating Procedure, and Scaling of Operational Test Forms**

### **Technical Report**



Prepared for the New York State Education Department  
by Pearson

**December 2013**

# Copyright

---

Developed and published under contract with the New York State Education Department by Pearson.

Copyright © 2013 by the New York State Education Department.

## Table of Contents

---

Table of Contents .....	i
List of Tables .....	iii
List of Figures .....	iii
Section I: Introduction.....	1
PURPOSE .....	1
Section II: Field Test Analysis .....	1
FILE PROCESSING AND DATA CLEANUP .....	2
CLASSICAL ANALYSIS .....	2
<i>Item Difficulty</i> .....	3
<i>Item Discrimination</i> .....	3
<i>Test Reliability</i> .....	4
<i>Scoring Reliability</i> .....	5
<i>Inter-Rater Agreement</i> .....	7
<i>Constructed-Response Item Means and Standard Deviations</i> .....	7
<i>Intraclass Correlation</i> .....	7
<i>Weighted Kappa</i> .....	8
ITEM RESPONSE THEORY (IRT) AND THE CALIBRATION AND EQUATING OF THE FIELD TEST ITEMS .....	9
<i>Item Calibration</i> .....	11
<i>Item Fit Evaluation</i> .....	11
DIFFERENTIAL ITEM FUNCTIONING.....	14
<i>The Mantel Chi-Square and Standardized Mean Difference</i> .....	14
<i>Multiple-Choice Items</i> .....	15
<i>The Odds Ratio</i> .....	15
<i>The Delta Scale</i> .....	16
<i>DIF Classification for MC Items</i> .....	16
<i>DIF Classification for CR Items</i> .....	16
Section III: Equating Procedure.....	17
RANDOMLY EQUIVALENT GROUP EQUATING DESIGN .....	17
Section IV: Scaling of Operational Test Forms.....	21
References .....	22
Appendix A: Classical Item Analysis .....	24
Appendix B: Inter-Rater Consistency – Point Differences Between First and Second Reads.....	38
Appendix C: Additional Measures of Inter-Rater Reliability and Agreement.....	41

Appendix D: Partial-Credit Model Item Analysis .....	45
Appendix E: DIF Statistics .....	58

## List of Tables

---

Table 1. Need/Resource Capacity Category Definitions .....	1
Table 2. Classical Item Analysis Summary .....	4
Table 3. Test and Scoring Reliability .....	6
Table 4. Criteria to Evaluate Mean-Square Fit Statistics .....	11
Table 5. Partial-Credit Model Item Analysis Summary .....	13
Table 6. DIF Classification for MC Items .....	16
Table 7. DIF Classification for CR Items .....	17
Table 8. Initial Mean Abilities and Equating Constants.....	20

## List of Figures

---

Figure 1. $2 \times t$ Contingency Table at the $k^{\text{th}}$ of K Levels.....	14
--	----

## Section I: Introduction

---

### PURPOSE

The purpose of this report is to document the psychometric properties of the New York State Regents Examination in Algebra I (Common Core). In addition, this report documents the procedures used to analyze the results of the field test and to equate and scale the operational test forms.

## Section II: Field Test Analysis

---

In May 2013, prospective items for the New York State Regents Examination in Algebra I (Common Core) were field tested. The results of this testing were used to evaluate item quality. Only items with acceptable statistical characteristics can be selected for use on operational tests.

Representative student samples for participation in this testing were selected to mirror the demographics of the student population that is expected to take the operational test. The Need/Resource Capacity Categories in Table 1 were used as variables in the sampling plan.

**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	All districts at or above the 70 <sup>th</sup> 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 <sup>th</sup> percentile on the index with fewer than 50 students per square mile or enrollment of fewer than 2500
Average N/RC Districts	All districts between the 20 <sup>th</sup> and 70 <sup>th</sup> percentiles on the index
Low N/RC Districts	All districts below the 20 <sup>th</sup> percentile on the index
Charter Schools	Each charter school is a district

## FILE PROCESSING AND DATA CLEANUP

The Regents examinations utilize both multiple-choice (MC) and constructed-response (CR) item types in order to more fully assess student ability. Multiple field test (FT) forms were given during this administration to allow a large number of items to be field tested without placing an undue burden on the students participating in the field test; each student only took a small subset of the items being field tested. The NYSED handled all scanning of the MC responses. Scoring of the CR responses was performed by Measurement Incorporated (MI) under contract with the NYSED. The NYSED and MI produced separate data files which were provided to Pearson. A test map file that documented the items on each of the FT forms was also provided to Pearson by the NYSED. Finally, student data file layouts containing the position of every field within the student data files from both the NYSED and MI were also provided to Pearson by the NYSED. Upon receipt of these files, Pearson staff checked the data, test map, and layouts for consistency. Any anomalies were referred back to the NYSED for resolution. After these had been resolved and corrected as necessary, final processing of the data file then took place. Merging of the NYSED and MI provided data was accomplished through uniquely assigned booklet numbers. This processing included the identification and deletion of invalid student test records through the application of a set of predefined exclusion rules<sup>1</sup>. The original student data file received from the NYSED contained 48,370 records (which contained student records for both the Common Core and Non-Common Core portions of the examination); the final field test data file for the Common Core portion contained 26,829 records.

Within the final data file used in the field test analyses MC responses were scored according to the item keys contained in the test map; correct responses received a score of 1 while incorrect responses received a score of 0. CR item scores were taken directly from the student data file, with the exception that out-of-range scores were assigned scores of 0. For Item Response Theory (IRT) calibrations, blanks (i.e., missing data; not omits) were also scored as 0.

In addition to the scored data, the final data file also contained the unscored student responses and scores. Unscored data was used to calculate the percentage of students who selected the various answer choices for the MC items or the percentage of students who received each achievable score point for the CR items. The frequency of students leaving items blank was also calculated. The scored data were used for all other analyses.

## CLASSICAL ANALYSIS

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

---

<sup>1</sup> These exclusion rules flagged records without both an MC and a CR component, records with invalid or out-of-range form numbers, records without any responses, and duplicate records. These records were dropped prior to analysis.

$$x = t + e$$

All test scores are composed of both a true and an error component. For example, the choice of test items or administration conditions might influence student responses, making a student's observed score higher or lower than the student's true ability would warrant. This error component is random and uncorrelated with (i.e., unrelated to) the student's true score. Across an infinitely large number of administrations, the mean of the error scores would be zero. Thus, the best estimate of a student's true score for any test administration (or their expected score given their [unobservable] true level of ability or true score) is that student's observed score. This expectation is expressed as follows:

$$E(x) = t$$

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 typically defined as the average of scores for a given item. For MC items, this value (commonly referred to as a p-value) ranges from 0 to 1. For CR items, this value ranges from 0 to the maximum possible score. In order to place all item means on a common metric (ranging from 0 to 1), CR item means were divided by the maximum points possible for the item.

### *Item Discrimination*

Item discrimination is defined as the correlation between a score on a given test question and the overall raw test score. These correlations are Pearson correlation coefficients. For MC items, it is also known as the point-biserial correlation.

Table 2 presents a summary of the classical item analysis for each of the field test forms. The first three columns from the left identify the form number, the number of students who took each form, and the number of items on each field test form, respectively. The remaining columns are divided into two sections (i.e., item difficulty and discrimination). Recall that for CR items, item means were divided by the maximum number of points possible in order to place them in the same metric as the MC items. There were no items with difficulties greater than 0.90; 48 items (out of 338 or 14%; 12 items were DNS) had correlations that were less than 0.25. In addition to the summary information provided in Table 2, further classical item statistics are provided in Appendix A.



**Table 2. Classical Item Analysis Summary**

Form	N-Count	No. of Items	Item Difficulty			Item Discrimination		
			<0.50	0.50 to 0.90	>0.90	<0.25	0.25 to 0.50	>0.50
101	759	10	7	3	0	1	6	3
102	759	10	5	4	0	0	7	2
103	764	10	8	2	0	3	5	2
104	753	10	7	1	0	1	6	1
105	775	10	7	2	0	0	7	2
106	776	10	7	3	0	0	7	3
107	787	10	5	4	0	0	7	2
108	780	10	7	3	0	2	5	3
109	771	10	6	3	0	1	6	2
110	791	10	8	2	0	1	6	3
111	785	10	7	2	0	3	4	2
112	780	10	9	1	0	0	7	3
113	761	10	9	0	0	2	4	3
114	763	10	6	3	0	0	7	2
115	770	10	7	2	0	0	8	1
116	773	10	8	2	0	2	5	3
117	775	10	5	4	0	1	5	3
118	783	10	9	1	0	1	6	3
119	786	10	8	2	0	1	7	2
120	769	10	9	1	0	2	6	2
121	781	10	6	3	0	1	6	2
122	722	10	6	4	0	1	5	4
123	760	10	8	2	0	2	5	3
124	780	10	5	3	0	1	3	4
125	773	10	7	2	0	0	7	2
126	774	10	8	1	0	1	5	3
127	766	10	7	3	0	1	5	4
128	756	10	7	1	0	2	4	2
129	780	10	9	1	0	2	5	3
130	761	10	8	2	0	1	6	3
131	754	10	7	3	0	1	6	3
132	740	10	7	2	0	2	4	3
133	718	10	10	0	0	3	5	2
134	745	10	8	1	0	2	5	2
135	759	10	9	1	0	0	9	1

For some forms, the item counts in the “Item Difficulty” and “Item Discrimination” columns may not sum to the value in the “No. of Items” column due to DNS (Do Not Score) items.

### *Test Reliability*

Reliability is the consistency of the results obtained from a measurement with respect to time or between 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: (1) test length and (2) homogeneity of the items. In general, the more items on the examination, the higher the reliability; and the more similar the items, the higher the reliability.

Table 3 contains the internal consistency statistics for each of the field test forms under the heading “Test Reliability.” These statistics ranged from 0.302 to 0.664. It should be noted that these FT forms were extremely short (8–10 items); operational tests are composed of more items and can be expected to have higher reliabilities than do these field test forms.

### *Scoring Reliability*

One concern with CR items is the reliability of the scoring process (i.e., consistency of the score assignment). CR items must be read by scorers who assign scores based on a comparison between the rubric and student responses. Consistency between scorers is a critical part of the reliability of the assessment. To track scorer consistency, approximately 10% of the test booklets are scored a second time (these are termed “second read scores”) and compared to the original set of scores (also known as “first read scores”).

As an overall measure of scoring reliability, the Pearson correlation coefficient between the first and second scores for all CR items with second read scores was computed for each form. This statistic is often used as an overall indicator of scoring reliability, and it generally ranges from 0 to 1. Table 3 contains these values in the column headed “Scoring Reliability.” They ranged from 0.844 to 0.962, indicating a high degree of reliability.

**Table 3. Test and Scoring Reliability**

<b>Form Number</b>	<b>Test Reliability</b>	<b>Scoring Reliability</b>
101	0.626	0.873
102	0.470	0.945
103	0.375	0.902
104	0.349	0.889
105	0.587	0.924
106	0.619	0.924
107	0.612	0.921
108	0.596	0.952
109	0.441	0.844
110	0.574	0.870
111	0.302	0.889
112	0.624	0.884
113	0.455	0.878
114	0.466	0.924
115	0.449	0.913
116	0.485	0.844
117	0.522	0.907
118	0.555	0.944
119	0.580	0.898
120	0.458	0.911
121	0.486	0.907
122	0.582	0.925
123	0.594	0.897
124	0.614	0.898
125	0.599	0.935
126	0.519	0.902
127	0.664	0.919
128	0.431	0.918
129	0.607	0.904
130	0.551	0.943
131	0.571	0.896
132	0.469	0.942
133	0.469	0.931
134	0.440	0.962
135	0.549	0.921

### *Inter-Rater Agreement*

For each CR item, the difference between the first and second reads was tracked and the number of times each possible difference between the scores occurred was tabulated. These values were then used to calculate the percentage of times each possible difference occurred. 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. Blank cells in the table indicate out-of-range differences (e.g., it is impossible for two raters to differ by more than one point in their scores on an item with a maximum possible score of one; cells in the table other than -1, 0, and 1 would therefore be blanked out).

Appendix B contains the proportion of occurrence of these differences for each CR item. Items were worth between two and six points. The percentage of exact matches between the first and second reads ranged from 61.1 to 100%. The percentage of first and second reads that were exact or adjacent matches ranged from 84.7 to 100%. Appendix C contains additional summary information regarding the first and second reads, including the percentage of first and second scores that were exact or adjacent matches for each item.

### *Constructed-Response Item Means and Standard Deviations*

Appendix C also contains the mean and standard deviation of the first and second scores for each CR item. The largest difference between the item means for the first and second read scores was 0.1, while the largest difference between the standard deviation statistics was 0.12.

### *Intraclass Correlation*

In addition, Appendix C contains the intraclass correlations for the items. These correlations are calculated using a formulation given by Shrout and Fleiss (1979). Specifically, they described six different models based on various configurations of judges and targets (in this case, papers that are being scored). For this assessment, the purpose of the statistic is to describe the reliability of single ratings, and each paper is scored by two judges who are randomly assigned from the larger pool of judges, and who score multiple papers. This description fits their “Case 1.” Further, they distinguish between situations where the score assigned to the paper is that of a single rater versus that where the score is the mean of  $k$  raters. Since the students’ operational scores are those from single (i.e., the first) raters, the proper intraclass correlation in this instance is termed by Shrout and Fleiss as “ICC(1,1).” It will be referred to herein simply as the “intraclass correlation” (ICC).

While the ICC is a bona fide correlation coefficient, it differs from a regular correlation coefficient in that its value remains the same regardless of how the raters are ordered. A regular Pearson correlation coefficient would change values if, for example, half of the second raters were switched to the first position, while the ICC would maintain a consistent value. Because the papers were randomly assigned to the judges, ordering is arbitrary, and thus the ICC is a more appropriate measure of reliability than the Pearson correlation coefficient in this situation. The ICC ranges from

zero (the scores given by the two judges are unrelated) to one (the scores from the two judges match perfectly); negative values are possible but rare, and have essentially the same meaning as values of zero. It should also be noted that the ICC can be affected by low degrees of variance in the scores being related, similar to the way that regular Pearson correlation coefficients are affected. ICCs for items where almost every examinee achieved the same score point (e.g., an extremely easy dichotomous item where almost every examinee was able to answer it correctly) may have a low or negative ICC even though almost all ratings by the judges matched exactly.

McGraw and Wong (1996, Table 4, p. 35) state that the ICC can be interpreted as “the degree of absolute agreement among measurements made on randomly selected objects. It estimates the correlation of any two measurements.” Since it is a correlation coefficient, its square indicates the percent of variance in the scores that is accounted for by the relationship between the two sets of scores (i.e., the two measurements). In this case, these scores are those of the pair of judges. ICC values greater than 0.60 indicate that at least 36% ( $0.60^2$ ) of the variation in the scores given by the raters is accounted for by variations in the responses to the items that are being scored (e.g., variations in the ability being measured) rather than by variations caused by a combination of differences in the severity of the judges, interactions between judge severity and the items, and random error (e.g., variations exterior to the ability being measured). It is generally preferred that items have ICCs at this level or higher. Only three items had ICCs below 0.60. Consistent with other information provided in the table, these values indicate a high to very high level of scoring reliability for almost all of the items in the field test.

One item (item 10 on Form 134) merits special mention. This item was an extremely difficult item; only 16 out of 745 students were able to achieve a score of one or two on this item. None of these 16 students were among the 124 students who were double scored on the item—all of these 124 students either received a score of zero or didn’t answer the item (and thus were also scored as a zero). In such a situation (no variance in both the first and second set of scores), neither the intraclass correlation nor the kappa coefficient can be calculated. These are thus notated as “N/A” in Appendix C.

### *Weighted Kappa*

Weighted Kappa (Cohen, 1968) was also calculated for each item, based on the first and second reads and is included in Appendix C as well. This statistic is an estimate of the agreement of the score classifications over and above that which would be expected to occur by chance. Similar to the ICC, its value can range between zero (the scores given by the judges agree as often as would be expected by chance) and one (scores given by the judges agree perfectly). In addition, negative values are possible, but rare, and have the same interpretation as zero values. One set of guidelines for the evaluation of this statistic is (Fleiss, 1981):

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

The results show excellent reproducibility between the first and second reads for all but 31 items, and good reproducibility for those 31. With the lowest kappa being equal to 0.43, there were no items displaying marginal reproducibility. The scoring reliability analyses offer strong evidence that the scoring of the CR items was performed in a highly reliable manner.

## **ITEM RESPONSE THEORY (IRT) AND THE CALIBRATION AND EQUATING OF THE FIELD TEST ITEMS**

While classical test theory-based statistical measures are useful for assessing the suitability of items for operational use (i.e., use as part of an assessment used to measure student ability and thus having real-world consequences for students, teachers, schools, and administrators), their values are dependent on both the psychometric properties of the items and the ability distributions of the samples upon which they are based. In other words, classical test theory-based statistics are *sample-dependent statistics*.

In contrast, Item Response Theory (IRT) based statistics are not dependent on the sample over which they are estimated—they are invariant across different samples (Hambleton, Swaminathan, & Rogers, 1991; Lord, 1980). This invariance allows student ability to be estimated on a common metric even if different sets of items are used (as with different test forms over different test administrations).

The process of estimating IRT-based item parameters is referred to as “item calibration,” and the placing of these parameters on a common metric or scale is termed “equating.” While one reason for the field testing of items is to allow their suitability for use in the operational measurement of student ability to be assessed, the data resulting from field testing is also used to place items on the scale of the operational test (i.e., they are equated to the operational metric). Once items are on this common metric, any form composed of items from this pool can be scaled (the process through which scale score equivalents for each achievable raw score are derived) and the resulting scale scores will be directly comparable to those from other administrations, even though the underlying test forms are composed of different sets of items.

There are several variations of IRT that differ mainly in the way item behavior is modeled. The New York State Regents Examinations use the Rasch family of IRT statistics (Rasch, 1980; Masters, 1982) to calibrate, scale, and equate all subjects.

The most basic expression of the Rasch model is in the item characteristic curve. It conceptualizes the probability of a correct response to an item as a function of the ability level and the item’s difficulty. The probability of a correct response is bounded by “1” (certainty of a correct response) and “0” (certainty of an incorrect response). The ability scale is theoretically unbounded. In practice, the ability scale ranges from approximately  $-4$  to  $+4$  logits. The relationship between examinee ability  $\theta$ , item difficulty  $D_i$ , and probability of answering the item correctly  $P_i$  is shown in the equation below:

$$P_i(\theta) = \frac{\exp(\theta - D_i)}{1 + \exp(\theta - D_i)}$$

Examinee ability ( $\theta$ ) and item difficulty ( $D_i$ ) are on the same scale. This is useful for certain purposes. An examinee with an ability level equal to the item difficulty will have a 50% chance of answering the item correctly; if his or her ability level is higher than the item difficulty, then the probability of answering the item correctly is commensurately higher, and the converse is also true.

The Rasch Partial Credit Model (PCM) (Masters, 1982) is a direct extension of the dichotomous one-parameter IRT model above. For an item involving  $m$  score categories, the general expression for the probability of achieving a score of  $x$  on the item is given by

$$P_x(\theta) = \frac{\exp[\sum_{k=0}^x(\theta - D_k)]}{\sum_{h=0}^m \exp[\sum_{k=0}^h(\theta - D_k)]}$$

where

$$D_0 \equiv 0.0$$

In the above equation,  $P_x$  is the probability of achieving a score of  $x$  given an ability of  $\theta$ ;  $m$  is the number of achievable score points minus one (note that the subscript  $k$  runs from 0 to  $m$ ); and  $D_k$  is the step parameter for step  $k$ . The steps are numbered from 0 to the number of achievable score points minus one, and step 0 ( $D_0$ ) is defined as being equal to zero. Note that a four-point item, for example, usually has five achievable score points (0, 1, 2, 3, and 4), thus the step numbers usually mirror the achievable point values.

According to this model, the probability of an examinee scoring in a particular category (step) is the sum of the logit (log-odds) differences between  $\theta$  and  $D_k$  of all the completed steps, divided by the sum of the differences of all the steps of an item. Thissen and Steinberg (1986) refer to this model as a divide-by-total model. The parameters estimated by this model are  $m_i - 1$  threshold (difficulty) estimates and represent the points on the ability continuum where the probability of the examinee achieving score  $m_i$  exceeds that of  $m_{i-1}$ . The mean of these threshold estimates is used as an overall summary of the polytomous item's difficulty.

If the number of achievable score points is one (i.e., the item is dichotomous), then the PCM reduces to the basic Rasch IRT model for dichotomous items. This means that dichotomous and polytomous items are being scaled using a common model and therefore can be calibrated, equated, and scaled together. It should be noted that the Rasch model assumes that all items have equal levels of discrimination and that there is no guessing on MC items. However, it is robust to violations of these assumptions, and items that violate these assumptions to a large degree are usually flagged for item-model misfit.

### *Item Calibration*

When interpreting IRT item parameters, it is important to remember that they do not have an absolute scale—rather, their scale (in terms of mean and standard deviation) is purely arbitrary. It is conventional to set the mean of the item difficulties to zero when an assessment is scaled for the first time. Rasch IRT scales the theta measures in terms of *logits*, or “log-odds units.” The length of a logit varies from test to test, but generally the standard deviation of the item difficulties of a test scaled for the first time will be somewhere in the area of 0.6–0.8. While the item difficulties are invariant with respect to one another, the absolute level of difficulty represented by their mean is dependent on the overall difficulty of the group of items with which it was tested. In addition, there is no basis for assuming that the difficulty values are normally distributed around their mean—their distribution again depends solely upon the intrinsic difficulties of the items themselves. Thus, if a particularly difficult set of items (relative to the set of items originally calibrated) was field tested, their overall mean would most probably be greater than zero, and their standard deviation would be considerably less than one. In addition, they would most probably not be normally distributed.

Rasch item difficulties generally range from –3.0 to 3.0, although very easy or difficult items can fall outside of this range. Items should not be discounted solely on the basis of their difficulty. A particular topic may require either a difficult or an easy item. Items are usually most useful if their difficulty is close to a cut score, as items provide the highest level of information at the ability level equal to their difficulty. Items with difficulties farther away from the cuts provide less information about students with abilities close to the cut scores (and, hence, are more susceptible to misclassification), but are still useful. In general, items should be selected for use based on their content, with their Rasch difficulty being only a secondary consideration.

### *Item Fit Evaluation*

The INFIT statistic is used to assess how well items fit the Rasch model. Rasch theory models the probability of a student being able to answer an item correctly as a function of the student’s level of ability and the item’s difficulty, as stated previously. The Rasch model also assumes that items’ discriminations do not differ, and that the items are not susceptible to guessing. If these assumptions do not hold (if, for example an item has an extremely high or low level of discrimination), then the item’s behavior will not be well modeled by Rasch IRT. Guidelines for interpretation of the INFIT statistic are taken from Linacre (2005) and can be found in Table 4 below.

**Table 4. Criteria to Evaluate Mean-Square Fit Statistics**

INFIT	Interpretation
>2.0	Distorts or degrades the measurement system
1.5–2.0	Unproductive for construction of measurement, but not degrading
0.5–1.5	Productive for measurement
<0.5	Unproductive for measurement, but not degrading. May produce misleadingly good reliabilities and separations



INFIT is an information-weighted fit statistic, which is more sensitive to unexpected behavior affecting responses to items near the person's measure (or ability) level. In general, values near 1.0 indicate little distortion of the measurement system, while values less than 1.0 indicate observations are too predictable (redundancy, model overfit). Values greater than 1.0 indicate unpredictability (unmodeled noise, model underfit).

Table 5 contains a summary of the analysis for each of the field test forms. The first column on the left 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, respectively. The following columns show the frequency of items at three levels of difficulty (easier items with a Rasch difficulty  $<-2.0$ , moderate items with a Rasch difficulty between  $-2.0$  and  $2.0$ , and more difficult items with a Rasch difficulty  $>2.0$ ), and frequencies of item misfits as classified in the preceding table. Nearly all of the items fell within the moderate  $-2.0$  to  $+2.0$  difficulty range, and there were no items with an INFIT statistic outside the range most productive for measurement. Item level results of the analysis can be found in Appendix D.

**Table 5. Partial-Credit Model Item Analysis Summary**

Form	N-Count	No. of Items	Rasch			INFIT			
			<-2.0	-2.0 to 2.0	>2.0	<0.5	0.5 to 1.5	1.5 to 2.0	>2.0
101	747	10	0	10	0	0	10	0	0
102	734	10	0	9	0	0	9	0	0
103	741	10	0	9	1	0	10	0	0
104	715	10	0	7	1	0	8	0	0
105	752	10	0	8	1	0	9	0	0
106	769	10	1	8	1	0	10	0	0
107	763	10	0	9	0	0	9	0	0
108	760	10	0	10	0	0	10	0	0
109	755	10	1	7	1	0	9	0	0
110	772	10	0	10	0	0	10	0	0
111	771	10	0	9	0	0	9	0	0
112	759	10	0	10	0	0	10	0	0
113	718	10	0	9	0	0	9	0	0
114	753	10	0	9	0	0	9	0	0
115	745	10	0	8	1	0	9	0	0
116	746	10	0	9	1	0	10	0	0
117	757	10	0	8	1	0	9	0	0
118	753	10	0	9	1	0	10	0	0
119	761	10	0	10	0	0	10	0	0
120	748	10	0	9	1	0	10	0	0
121	766	10	1	8	0	0	9	0	0
122	697	10	0	10	0	0	10	0	0
123	742	10	0	10	0	0	10	0	0
124	734	10	0	8	0	0	8	0	0
125	726	10	0	8	1	0	9	0	0
126	717	10	0	8	1	0	9	0	0
127	735	10	0	10	0	0	10	0	0
128	683	10	0	8	0	0	8	0	0
129	746	10	0	8	2	0	10	0	0
130	747	10	0	10	0	0	10	0	0
131	741	10	0	10	0	0	10	0	0
132	709	10	0	9	0	0	9	0	0
133	675	10	0	10	0	0	10	0	0
134	690	10	0	6	3	0	9	0	0
135	740	10	0	8	2	0	10	0	0

For some forms, the item counts in the “Rasch” and “INFIT” columns may not sum to the value in the “No. of Items” column due to DNS (Do Not Score) items. Also, “N-Count” does not include students with zero or perfect scores.

## DIFFERENTIAL ITEM FUNCTIONING

Differential Item Functioning (DIF) occurs when members of a particular group have a different probability of success than members of another group who have the same level of ability for reasons unrelated to the academic skill or construct being measured. For example, items testing English grammar skills may be more difficult for LEP students as opposed to non-LEP students, but such differences are likely due to the fact that the item measures an academic skill related to English language proficiency. Such items would not be considered to be functioning differentially.

### *The Mantel Chi-Square and Standardized Mean Difference*

The Mantel  $\chi^2$  is a conditional mean comparison of the ordered response categories for reference and focal groups combined over values of the matching variable score. “Ordered” means that a response earning a score of “1” on an item is better than a response earning a score of “0” or “2” is better than “1,” and so on. “Conditional,” on the other hand, refers to the comparison of members from the two groups who received the same score on the matching variable, that is, the total test score in our analysis.

Group	Item Score				Total
	$y_1$	$y_2$	...	$y_T$	
Reference	$n_{R1k}$	$n_{R2k}$	...	$n_{Rtk}$	$n_{R+k}$
Focal	$n_{F1k}$	$n_{F2k}$	...	$n_{Ftk}$	$n_{F+k}$
Total	$n_{+1k}$	$n_{+2k}$	...	$n_{+tk}$	$n_{++k}$

**Figure 1.  $2 \times t$  Contingency Table at the  $k^{\text{th}}$  of  $K$  Levels.**

Figure 1 (from Zwick, Donoghue, & Grima, 1993) shows a  $2 \times t$  contingency table at the  $k^{\text{th}}$  level of  $K$  levels, where  $t$  represents the number of response categories and  $k$  represents the number of levels of the matching variable. The values  $y_1, y_2, \dots, y_T$  represent the  $t$  scores that can be gained on the item. The values  $n_{Ftk}$  and  $n_{Rtk}$  represent the numbers of focal and reference groups who are at the  $k^{\text{th}}$  level of the matching variable and gain an item score of  $y_t$ . The “+” indicates the total number over a particular index (Zwick et al., 1993). The Mantel statistic is defined as the following formula:

$$\text{Mantel}\chi^2 = \frac{\left( \sum_k F_k - \sum_k E(F_k) \right)^2}{\sum_k \text{Var}(F_k)}$$

in which  $F_k$  represents the sum of scores for the focal group at the  $k^{\text{th}}$  level of the matching variable and is defined as follows:

$$F_k = \sum_t y_t n_{Ftk}$$

The expectation of  $F_k$  under the null hypothesis is

$$E(F_k) = \frac{n_{F+k}}{n_{++k}} \sum_t y_t n_{Ftk}$$

The variance of  $F_k$  under the null hypothesis is as follows:

$$Var(F_k) = \frac{n_{R+k}n_{F+k}}{n_{++k}^2(n_{++k} - 1)} \left[ (n_{++k} \sum_t y_t^2 n_{+tk}) - (\sum_t y_t n_{+tk})^2 \right]$$

Under  $H_0$ , the Mantel statistic has a chi-square distribution with one degree of freedom. In DIF applications, rejecting  $H_0$  suggests that the students of the reference and focal groups who are similar in overall test performance tend to differ in their mean performance on the item. For dichotomous items the statistic is identical to the Mantel-Haenszel (MH) (1959) statistic without the continuity correction (Zwick et al., 1993).

A summary statistic to accompany the Mantel approach is the standardized mean difference (SMD) between the reference and focal groups proposed by Dorans and Schmitt (1991). This statistic compares the means of the reference and focal groups, adjusting for differences in the distribution of the reference and focal group members across the values of the matching variable. The SMD has the following form:

$$SMD = \sum_k p_{Fk} m_{Fk} - \sum_k p_{Fk} m_{Rk}$$

in which

$$p_{Fk} = \frac{n_{F+k}}{n_{F++}}$$

is the proportion of the focal group members who are at the  $k^{\text{th}}$  level of the matching variable;

$$m_{Fk} = \frac{1}{n_{F+k} \sum_t y_t n_{Ftk}}$$

is the mean item score of the focal group members at the  $k^{\text{th}}$  level; and  $m_{Rk}$  is the analogous value for the reference group. As can be seen from the equation above, the SMD is the difference between the unweighted item mean of the focal group and the weighted item mean of the reference group. The weights for the reference group are applied to make the weighted number of the reference-group students the same as in the focal group within the same level of ability. A negative SMD value implies that the focal group has a lower mean item score than the reference group, conditional on the matching variable.

### *Multiple-Choice Items*

For the MC items, the MH odds ratio (converted to the ETS delta scale [D]) is used to classify items into one of three categories of DIF.

### *The Odds Ratio*

The odds of a correct response (proportion passing divided by proportion failing) are  $P/Q$  or  $P/(1-P)$ . The *odds ratio* is the odds of a correct response of the reference group divided by the odds of a correct response of the focal group. For a given item, the odds ratio is defined as follows:

$$\alpha_{MH} = \frac{P_r/Q_r}{P_f/Q_f}$$

and the corresponding null hypothesis is that the odds of getting the item correct are equal for the two groups. Thus, the odds ratio is equal to 1:

$$\alpha_{MH} = \frac{P_r/Q_r}{P_f/Q_f} = 1$$

### *The Delta Scale*

To make the odds ratio symmetrical around zero with its range being in the interval  $-\infty$  to  $+\infty$  the odds ratio is transformed into a log odds ratio according to this equation:

$$\beta_{MH} = \ln(\alpha_{MH})$$

This simple natural logarithm transformation of the odds ratio is symmetrical around zero. This DIF measure is a signed index; a positive value signifies DIF in favor of the reference group, a negative value indicates DIF in favor of the focal group, and zero has the interpretation of equal odds of success on the item.  $\beta_{MH}$  also has the advantage of a linear relationship to other interval scale metrics (Camilli & Shepard, 1994).  $\beta_{MH}$  is placed on the ETS delta scale (D) using the following equation:

$$D = -2.35\beta_{MH}$$

### *DIF Classification for MC Items*

Table 6 depicts DIF classifications for MC items. Classification depends on the delta (D) value and the significance of its difference from zero ( $p < 0.05$ ). The criteria are derived from those used by the National Assessment of Educational Progress (Allen, Carlson, & Zalanak, 1999) in the development of their assessments.

**Table 6. DIF Classification for MC Items**

Category	Description	Criterion
A	No DIF	D not significantly different from zero or $ D  < 1.0$
B	Moderate DIF	$1.0 \leq  D  < 1.5$ or not otherwise A or C
C	High DIF	D is significantly different from zero and $ D  \geq 1.5$

### *DIF Classification for CR Items*

The SMD is divided by the total group item standard deviation to obtain an effect-size value for the SMD ( $ES_{SMD}$ ). The value of  $ES_{SMD}$  and the significance of the Mantel  $\chi^2$  statistic ( $p < 0.05$ ) are then used to determine the DIF category of the item as depicted in Table 7 below.

**Table 7. DIF Classification for CR Items**

Category	Description	Criterion
AA	No DIF	Non-significant Mantel $\chi^2$ or $ ES_{SMD}  \leq 0.17$
BB	Moderate DIF	Significant Mantel $\chi^2$ and $0.17 <  ES_{SMD}  \leq 0.25$
CC	High DIF	Significant Mantel $\chi^2$ and $0.25 <  ES_{SMD} $

Reliable DIF results are dependent on the number of examinees in both the focal and reference groups. Clauser and Mazor (1998) state that a minimum of 200 to 250 examinees per group are sufficient to provide reliable results. Some testing organizations require as many as 300 to 400 examinees per group (Zwick, 2012) in some applications. For the field testing of the Regents examinations, the sample sizes were such that only comparisons based on gender (e.g., males vs. females) were possible. Even for gender, sample sizes were only moderately large, and so the results should be interpreted with caution.

The DIF statistics for gender are shown in Appendix E. MC items in DIF categories “B” and “C” and CR items in categories “BB” and “CC” were flagged. These flags are shown in the “DIF Category” column (“A” and “AA” category items will have blank cells here). The “Favored Group” column indicates which gender is favored for items that are flagged.

### Section III: Equating Procedure

Students participating in the 2013 field test administration for the New York State Regents Examination in Integrated Algebra/Algebra I received one of 55 test forms (numbered 101–155). Forms 101–135 addressed the Common Core based curriculum. Form 101 was the anchor form for the equating and was an intact form that had been administered in the prior year. Because the form had been previously administered, its items had known parameters on the operational scale. The remaining test forms were composed of items that had not been administered to New York State students. Test forms were spiraled within classrooms, so that students had an equal chance of receiving any of the 55 forms, depending solely on their ordinal position within the classroom. In essence, students were randomly assigned to test forms, forming randomly equivalent groups taking each of the forms. Appendices A and D (with the classical and Rasch IRT item level statistics) may be consulted to determine the characteristics of the items (e.g., item type and maximum number of points possible) that made up each form.

#### RANDOMLY EQUIVALENT GROUP EQUATING DESIGN

The equating analyses were based on the assumption that the groups taking the different forms had equivalent ability distributions and means. Given the random assignment of forms to examinees, this was a reasonable assumption. The initial step in the analyses was to calibrate all forms, both the anchor form and the remaining field test forms. All forms were calibrated using Winsteps, version 3.60 (Linacre, 2005).

The anchor form calibration began with all anchor item difficulty parameters fixed to their known values from the previous year. Because it is possible for item parameters to “drift” (shift their difficulties relative to one another), a stability check was integrated into the analysis.

Winsteps provides an item level statistic, termed “displacement.” Linacre (2011, p. 545) describes this statistic as:

...the size of the change in the parameter estimate that would be observed in the next estimation iteration if this parameter was free (unanchored) and all other parameter estimates were anchored at their current values. For a parameter (item or person) that is anchored in the main estimation, (the displacement value) indicates the size of disagreement between an estimate based on the current data and the anchor value.

This statistic was used to identify items with difficulties that had shifted, relative to the difficulties of the other items on the form. After the initial calibration run, the Winsteps displacement values for all anchor form items were examined for absolute values greater than 0.30. If present, the item with the largest absolute displacement value was removed from anchored status, but remained on the test form. Its difficulty value was subsequently reestimated relative to the difficulties of the remaining anchored items. The Winsteps calibration was then rerun with the reduced anchor set, after which the displacement values were again checked for absolute values in excess of 0.30. If another was found, it was also removed from anchored status and the calibration rerun. This iterative procedure continued until all anchored items had displacements of 0.30 or less. No items were identified as having drifted for the 2013 analyses.

After a stable anchor item set had been identified, the mean of the ability estimates of the students who took the anchor form was computed<sup>2</sup>. This mean ability was then used as the target ability for the forms with the field test items. Because the groups taking the different forms were randomly equivalent and thus had the same mean ability, adjustment of the parameters of the field test items on any form to values that produced an ability distribution for students who had taken the form with a mean equal to the target ability from the anchor form would result in the parameters for the field test items on that form being equated to the scale of the anchor form, which was also the operational scale.

The equated mean ability estimate for Form 101 was -0.11. This value became the target mean ability estimate for the field test forms.

---

<sup>2</sup> Because under Rasch IRT the ability of students with extreme scores (either zero or perfect scores) cannot be exactly computed (they are equal to  $-\infty$  and  $+\infty$ , respectively), they were excluded from this and all other analyses for both the anchor and other field test forms.

At this point in the analyses, the calibration of the anchor form was complete. The next step was the initial calibration of the field test forms. This was a “free” calibration, meaning that the item parameters were not constrained in any way. This initial calibration produced a set of Rasch difficulty parameters for the items on each form. Also produced as a part of the Winsteps calibration was a set of person ability estimates for each form.

The next step was the computation of an equating constant for each form. Under Rasch IRT, if all of the difficulty parameters on a form have a constant added to them, the ability estimates for examinees will also be changed from their previous values by the amount represented by that constant. Therefore, to adjust the item difficulty parameters such that the mean of the ability distribution is set equal to the target mean ability from the anchor form, an equating constant was calculated for each field test form by subtracting the field test form mean ability from the target mean ability. This value was then added to the Rasch difficulty parameter of all items on the field test form. These adjusted values were then used as anchors for a second Winsteps calibration of the field test form. The mean of the person ability values from this second calibration was computed and compared to the target mean. If the anchored field test mean ability differed from the target mean ability by 0.005 or more, then an additional equating constant was computed using the difference between the mean ability from the field test form anchored run and the target mean ability, and another anchored run was completed. This process continued until all adjusted field test form mean abilities were within the 0.005 tolerance limit around the targeted mean ability. The final equating constant for any field test form was the sum of the constants from each anchored round for that form. At this point, with the adjusted mean abilities for the field test forms all equal (within the specified limits) to the target abilities, all of the adjusted field test item parameters and the anchor item parameters were on the common operational scale, and thus could be used in any subsequent operational administration. The initial mean abilities and final equating constants for the field test forms can be found in Table 8.



**Table 8. Initial Mean Abilities and Equating Constants**

<b>Form Number</b>	<b>Mean Ability</b>	<b>Constant</b>
102	-0.16	0.06
103	-0.91	0.76
104	-1.25	1.01
105	-0.43	0.30
106	-0.33	0.21
107	-0.03	-0.06
108	-0.29	0.17
109	-0.50	0.37
110	-0.75	0.61
111	-0.71	0.54
112	-0.53	0.41
113	-0.96	0.80
114	-0.49	0.34
115	-0.79	0.62
116	-0.78	0.64
117	-0.60	0.45
118	-0.81	0.67
119	-0.63	0.49
120	-0.78	0.64
121	-0.46	0.32
122	-0.25	0.14
123	-0.48	0.36
124	-0.26	0.14
125	-0.89	0.73
126	-1.02	0.87
127	-0.57	0.44
128	-0.77	0.62
129	-0.93	0.78
130	-0.94	0.79
131	-0.32	0.21
132	-0.67	0.54
133	-0.90	0.76
134	-1.25	1.07
135	-0.83	0.69

## **Section IV: Scaling of Operational Test Forms**

---

Operational Integrated Algebra test forms for 2013 were based on the Non-Common Core curriculum. The items in the present administration will be used operationally beginning with the June 2014 administration. The technical report for the Non-Common Core Integrated Algebra Field Test should be consulted for details regarding the scaling of the 2013 Integrated Algebra operational assessments.

## References

---

- Allen, N. L., Carlson, J. E., & Zalanak, C. A. (1999). *The NAEP 1996 technical report*. Washington, DC: National Center for Education Statistics.
- Clauser, B. E., & Mazor, K. M. (1998). Using statistical procedures to identify differentially functioning test items. *Educational Measurement: Issues and Practice*, 17(1), 31–44.
- Cohen, J. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. *Psychological Bulletin*, 70, 213–220.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334.
- Dorans, N. J., & Schmitt, A. P. (1991). *Constructed-response and differential item functioning: A pragmatic approach* (ETS Research Report No. 91-49). Princeton, NJ: Educational Testing Service.
- Fleiss, J. L. (1981). *Statistical methods for rates and proportions*. 2nd ed. New York: John Wiley.
- Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of item response theory*. Newbury Park, CA: Sage Publications, Inc.
- Linacre, J. M. (2005). WINSTEPS Rasch measurement computer program and manual (PDF file) v 3.60. Chicago: Winsteps.com
- Linacre, J. M. (2011). *A user's guide to WINSTEPS MINISTEP Rasch-model computer programs: Program manual 3.73.0* (PDF file). Chicago: Winsteps.com
- Lord, F. M. (1980). *Applications of item response theory to practical testing problems*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Masters, G. N. (1982). A Rasch model for partial credit scoring. *Psychometrika*, 47, 149–174.
- McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods*, 1(1), 30–46.
- Rasch, G. (1980). *Probabilistic models for some intelligence and attainment tests*. Chicago, IL: University of Chicago Press.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: uses in assessing rater reliability. *Psychological Bulletin*, 86, 420–428.

- Thissen, D., & Steinberg, L. (1986). A taxonomy of item response models. *Psychometrika*, 51, 567–577.
- Zwick, R. (2012). *A review of ETS differential item functioning assessment procedures: Flagging rules, minimum sample size requirements, and criterion refinement* (ETS Research Report No. 12-08). Princeton, NJ: Educational Testing Service.
- Zwick, R., Donoghue, J. R., & Grima, A. (1993). Assessment of differential item functioning for performance tasks. *Journal of Educational Measurement*, 30, 233–251.

## Appendix A: Classical Item Analysis

In the following table, “Max” is the maximum number of possible points. “N-Count” refers to the number of student records in the analysis. “Alpha” contains Cronbach’s Coefficient  $\alpha$  (since this is a test [form] level statistic, it has the same value for all items within each form). For MC items, “B” represents the proportion of students who left the item blank, and “M1” through “M6” are the proportions of students who selected each of the four answer choices. For CR items, “B” represents the proportion of students who left the item blank, and “M0” through “M6” are the proportions of students who received scores of 0 through 6. “Mean” is the average of the scores received by the students. The final (right) column contains the Point-Biserial correlation for each item. There may be some instances of items with missing statistics; this occurs when an item was not scored.

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	101	MC	01	1	759	0.63	0.01		0.53	0.21	0.20	0.05			0.53	0.43
2013_IAlg	101	MC	02	1	759	0.63	0.01		0.15	0.53	0.11	0.21			0.53	0.49
2013_IAlg	101	MC	03	1	759	0.63	0.01		0.10	0.77	0.05	0.07			0.77	0.39
2013_IAlg	101	MC	04	1	759	0.63	0.01		0.43	0.19	0.23	0.14			0.43	0.35
2013_IAlg	101	MC	05	1	759	0.63	0.03		0.26	0.38	0.20	0.14			0.20	0.12
2013_IAlg	101	MC	06	1	759	0.63	0.02		0.11	0.16	0.50	0.20			0.50	0.41
2013_IAlg	101	MC	07	1	759	0.63	0.03		0.32	0.27	0.25	0.13			0.32	0.34
2013_IAlg	101	CR	08	2	759	0.63	0.21	0.40	0.21	0.18					0.57	0.67
2013_IAlg	101	CR	09	3	759	0.63	0.13	0.35	0.18	0.12	0.22				1.08	0.76
2013_IAlg	101	CR	10	4	759	0.63	0.22	0.50	0.13	0.14	0.00	0.00			0.43	0.59
2013_IAlg	102	MC	01	1	759	0.47	0.01		0.13	0.53	0.27	0.06			0.53	0.38
2013_IAlg	102	MC	02	1	759	0.47	0.01		0.66	0.20	0.03	0.10			0.66	0.52
2013_IAlg	102	MC	03	1	759	0.47	0.02		0.19	0.33	0.27	0.19			0.33	0.31
2013_IAlg	102	MC	04	1	759	0.47	0.01		0.10	0.06	0.59	0.24			0.59	0.46
2013_IAlg	102	MC	05	1	759	0.47	0.02		0.31	0.38	0.20	0.10			0.31	0.34
2013_IAlg	102	MC	06	1	759	0.47	0.01		0.12	0.14	0.40	0.33			0.33	0.38
2013_IAlg	102	MC	07	1	759	0.47	0.01		0.20	0.49	0.16	0.13			0.49	0.44

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	102	MC	08	1	759	0.47	0.03		0.18	0.06	0.50	0.23			0.50	0.42
2013_IAlg	102	CR	09	2	759	0.47	0.09	0.43	0.19	0.28					0.75	0.64
2013_IAlg	102	CR	10													
2013_IAlg	103	MC	01	1	764	0.38	0.01		0.16	0.21	0.18	0.44			0.16	0.04
2013_IAlg	103	MC	02	1	764	0.38	0.01		0.24	0.20	0.31	0.24			0.24	0.42
2013_IAlg	103	MC	03	1	764	0.38	0.03		0.24	0.39	0.23	0.11			0.39	0.20
2013_IAlg	103	MC	04	1	764	0.38	0.03		0.18	0.36	0.26	0.17			0.36	0.17
2013_IAlg	103	MC	05	1	764	0.38	0.01		0.10	0.09	0.24	0.55			0.55	0.38
2013_IAlg	103	MC	06	1	764	0.38	0.01		0.08	0.10	0.19	0.62			0.62	0.45
2013_IAlg	103	MC	07	1	764	0.38	0.02		0.20	0.46	0.21	0.11			0.46	0.51
2013_IAlg	103	CR	08	2	764	0.38	0.16	0.57	0.19	0.08					0.35	0.45
2013_IAlg	103	CR	09	2	764	0.38	0.45	0.46	0.09	0.00					0.09	0.33
2013_IAlg	103	CR	10	4	764	0.38	0.21	0.51	0.06	0.06	0.07	0.09			0.74	0.73
2013_IAlg	104	MC	01													
2013_IAlg	104	MC	02	1	753	0.35	0.01		0.25	0.19	0.47	0.07			0.47	0.37
2013_IAlg	104	MC	03	1	753	0.35	0.01		0.17	0.26	0.32	0.22			0.22	0.37
2013_IAlg	104	MC	04	1	753	0.35	0.01		0.08	0.65	0.11	0.16			0.16	0.27
2013_IAlg	104	MC	05	1	753	0.35	0.01		0.27	0.40	0.10	0.21			0.40	0.43
2013_IAlg	104	MC	06	1	753	0.35	0.01		0.12	0.16	0.54	0.17			0.54	0.47
2013_IAlg	104	MC	07	1	753	0.35	0.02		0.16	0.42	0.08	0.31			0.42	0.47
2013_IAlg	104	CR	08	2	753	0.35	0.31	0.68	0.01	0.00					0.02	0.17
2013_IAlg	104	CR	09	4	753	0.35	0.16	0.47	0.05	0.31	0.00	0.00			0.69	0.68
2013_IAlg	104	CR	10													
2013_IAlg	105	MC	01	1	775	0.59	0.01		0.47	0.18	0.15	0.20			0.47	0.43
2013_IAlg	105	MC	02	1	775	0.59	0.02		0.25	0.26	0.23	0.24			0.24	0.35
2013_IAlg	105	MC	03	1	775	0.59	0.01		0.45	0.10	0.29	0.15			0.45	0.41
2013_IAlg	105	MC	04													

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	105	MC	05	1	775	0.59	0.02		0.14	0.23	0.45	0.16			0.45	0.35
2013_IAlg	105	MC	06	1	775	0.59	0.01		0.19	0.17	0.48	0.15			0.48	0.38
2013_IAlg	105	MC	07	1	775	0.59	0.01		0.62	0.23	0.09	0.04			0.62	0.49
2013_IAlg	105	CR	08	4	775	0.59	0.13	0.43	0.06	0.17	0.15	0.05			1.08	0.78
2013_IAlg	105	CR	09	2	775	0.59	0.07	0.11	0.20	0.61					1.43	0.61
2013_IAlg	105	CR	10	4	775	0.59	0.24	0.64	0.11	0.00	0.00	0.01			0.15	0.44
2013_IAlg	106	MC	01	1	776	0.62	0.00		0.05	0.89	0.03	0.02			0.89	0.32
2013_IAlg	106	MC	02	1	776	0.62	0.01		0.25	0.14	0.18	0.42			0.42	0.49
2013_IAlg	106	MC	03	1	776	0.62	0.01		0.25	0.33	0.33	0.08			0.33	0.29
2013_IAlg	106	MC	04	1	776	0.62	0.02		0.17	0.29	0.38	0.15			0.38	0.32
2013_IAlg	106	MC	05	1	776	0.62	0.02		0.14	0.16	0.62	0.06			0.62	0.46
2013_IAlg	106	MC	06	1	776	0.62	0.01		0.71	0.18	0.06	0.04			0.71	0.45
2013_IAlg	106	MC	07	1	776	0.62	0.02		0.23	0.25	0.35	0.14			0.35	0.41
2013_IAlg	106	CR	08	4	776	0.62	0.11	0.75	0.05	0.02	0.02	0.05			0.34	0.62
2013_IAlg	106	CR	09	4	776	0.62	0.16	0.27	0.16	0.10	0.13	0.19			1.49	0.80
2013_IAlg	106	CR	10	2	776	0.62	0.30	0.50	0.18	0.03					0.23	0.59
2013_IAlg	107	MC	01	1	787	0.61	0.00		0.26	0.12	0.55	0.07			0.55	0.40
2013_IAlg	107	MC	02	1	787	0.61	0.00		0.04	0.83	0.04	0.07			0.83	0.39
2013_IAlg	107	MC	03	1	787	0.61	0.00		0.09	0.13	0.37	0.40			0.40	0.47
2013_IAlg	107	MC	04	1	787	0.61	0.01		0.10	0.63	0.09	0.17			0.63	0.47
2013_IAlg	107	MC	05	1	787	0.61	0.01		0.40	0.28	0.19	0.12			0.40	0.44
2013_IAlg	107	MC	06	1	787	0.61	0.02		0.15	0.16	0.53	0.13			0.53	0.39
2013_IAlg	107	MC	07	1	787	0.61	0.02		0.12	0.47	0.10	0.29			0.47	0.43
2013_IAlg	107	CR	08	2	787	0.61	0.22	0.51	0.15	0.12					0.39	0.61
2013_IAlg	107	CR	09													
2013_IAlg	107	CR	10	4	787	0.61	0.21	0.31	0.07	0.17	0.06	0.17			1.28	0.83

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	108	MC	01	1	780	0.60	0.01		0.72	0.13	0.05	0.08			0.13	0.22
2013_IAlg	108	MC	02	1	780	0.60	0.01		0.09	0.48	0.07	0.35			0.35	0.25
2013_IAlg	108	MC	03	1	780	0.60	0.01		0.31	0.08	0.52	0.08			0.52	0.50
2013_IAlg	108	MC	04	1	780	0.60	0.02		0.23	0.30	0.19	0.25			0.30	0.31
2013_IAlg	108	MC	05	1	780	0.60	0.02		0.23	0.24	0.18	0.34			0.34	0.28
2013_IAlg	108	MC	06	1	780	0.60	0.01		0.07	0.11	0.75	0.06			0.75	0.47
2013_IAlg	108	MC	07	1	780	0.60	0.02		0.07	0.08	0.08	0.76			0.76	0.46
2013_IAlg	108	CR	08	2	780	0.60	0.18	0.44	0.23	0.15					0.53	0.54
2013_IAlg	108	CR	09	2	780	0.60	0.14	0.38	0.07	0.41					0.88	0.65
2013_IAlg	108	CR	10	4	780	0.60	0.12	0.14	0.17	0.22	0.07	0.28			1.93	0.80
2013_IAlg	109	MC	01	1	771	0.44	0.01		0.34	0.19	0.30	0.16			0.30	0.26
2013_IAlg	109	MC	02	1	771	0.44	0.01		0.11	0.56	0.09	0.23			0.56	0.46
2013_IAlg	109	MC	03	1	771	0.44	0.01		0.12	0.51	0.14	0.21			0.21	0.20
2013_IAlg	109	MC	04	1	771	0.44	0.00		0.22	0.17	0.37	0.24			0.24	0.31
2013_IAlg	109	MC	05	1	771	0.44	0.01		0.06	0.03	0.04	0.86			0.86	0.31
2013_IAlg	109	MC	06	1	771	0.44	0.02		0.62	0.14	0.16	0.05			0.62	0.46
2013_IAlg	109	MC	07	1	771	0.44	0.03		0.36	0.14	0.20	0.27			0.36	0.36
2013_IAlg	109	CR	08	4	771	0.44	0.12	0.36	0.24	0.09	0.12	0.09			1.10	0.76
2013_IAlg	109	CR	09	6	771	0.44	0.28	0.59	0.09	0.03	0.00	0.00	0.01	0.01	0.22	0.54
2013_IAlg	109	CR	10													
2013_IAlg	110	MC	01	1	791	0.57	0.01		0.25	0.48	0.20	0.06			0.48	0.44
2013_IAlg	110	MC	02	1	791	0.57	0.02		0.15	0.22	0.33	0.28			0.33	0.28
2013_IAlg	110	MC	03	1	791	0.57	0.01		0.19	0.56	0.17	0.07			0.17	-0.05
2013_IAlg	110	MC	04	1	791	0.57	0.01		0.40	0.16	0.36	0.07			0.16	0.25
2013_IAlg	110	MC	05	1	791	0.57	0.01		0.21	0.11	0.11	0.56			0.56	0.44
2013_IAlg	110	MC	06	1	791	0.57	0.01		0.33	0.23	0.30	0.13			0.30	0.39
2013_IAlg	110	MC	07	1	791	0.57	0.03		0.42	0.31	0.15	0.09			0.42	0.41



Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	110	CR	08	2	791	0.57	0.05	0.23	0.21	0.51					1.23	0.59
2013_IAlg	110	CR	09	6	791	0.57	0.17	0.47	0.20	0.09	0.03	0.02	0.02	0.01	0.70	0.75
2013_IAlg	110	CR	10	2	791	0.57	0.18	0.41	0.19	0.21					0.62	0.68
2013_IAlg	111	MC	01	1	785	0.30	0.01		0.13	0.48	0.27	0.12			0.27	0.34
2013_IAlg	111	MC	02	1	785	0.30	0.00		0.18	0.15	0.34	0.32			0.32	0.41
2013_IAlg	111	MC	03	1	785	0.30	0.01		0.50	0.15	0.22	0.12			0.50	0.43
2013_IAlg	111	MC	04	1	785	0.30	0.02		0.26	0.12	0.27	0.33			0.27	0.22
2013_IAlg	111	MC	05	1	785	0.30	0.01		0.23	0.21	0.45	0.09			0.45	0.29
2013_IAlg	111	MC	06	1	785	0.30	0.03		0.22	0.45	0.21	0.09			0.22	0.16
2013_IAlg	111	MC	07	1	785	0.30	0.04		0.17	0.36	0.26	0.16			0.26	0.18
2013_IAlg	111	CR	08	2	785	0.30	0.08	0.34	0.44	0.14					0.72	0.58
2013_IAlg	111	CR	09	2	785	0.30	0.11	0.27	0.21	0.41					1.03	0.67
2013_IAlg	111	CR	10													
2013_IAlg	112	MC	01	1	780	0.62	0.01		0.32	0.12	0.48	0.06			0.32	0.25
2013_IAlg	112	MC	02	1	780	0.62	0.01		0.24	0.19	0.45	0.11			0.45	0.38
2013_IAlg	112	MC	03	1	780	0.62	0.01		0.04	0.04	0.26	0.64			0.64	0.49
2013_IAlg	112	MC	04	1	780	0.62	0.01		0.17	0.37	0.21	0.24			0.37	0.31
2013_IAlg	112	MC	05	1	780	0.62	0.01		0.22	0.18	0.50	0.09			0.50	0.39
2013_IAlg	112	MC	06	1	780	0.62	0.01		0.27	0.29	0.12	0.31			0.31	0.33
2013_IAlg	112	MC	07	1	780	0.62	0.01		0.22	0.21	0.43	0.13			0.43	0.34
2013_IAlg	112	CR	08	4	780	0.62	0.08	0.54	0.25	0.07	0.05	0.01			0.56	0.67
2013_IAlg	112	CR	09	2	780	0.62	0.21	0.31	0.21	0.27					0.75	0.64
2013_IAlg	112	CR	10	4	780	0.62	0.14	0.30	0.25	0.15	0.10	0.06			1.07	0.75
2013_IAlg	113	MC	01													
2013_IAlg	113	MC	02	1	761	0.45	0.02		0.18	0.28	0.25	0.28			0.28	0.17
2013_IAlg	113	MC	03	1	761	0.45	0.02		0.16	0.27	0.22	0.33			0.27	0.19
2013_IAlg	113	MC	04	1	761	0.45	0.02		0.18	0.15	0.42	0.23			0.23	0.34

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	113	MC	05	1	761	0.45	0.01		0.19	0.20	0.20	0.40			0.20	0.25
2013_IAlg	113	MC	06	1	761	0.45	0.03		0.42	0.33	0.15	0.07			0.42	0.35
2013_IAlg	113	MC	07	1	761	0.45	0.04		0.08	0.30	0.14	0.44			0.44	0.43
2013_IAlg	113	CR	08	2	761	0.45	0.26	0.41	0.15	0.18					0.51	0.65
2013_IAlg	113	CR	09	6	761	0.45	0.20	0.52	0.17	0.06	0.02	0.01	0.01	0.01	0.49	0.70
2013_IAlg	113	CR	10	2	761	0.45	0.24	0.33	0.30	0.13					0.55	0.52
2013_IAlg	114	MC	01	1	763	0.47	0.00		0.13	0.07	0.73	0.07			0.73	0.44
2013_IAlg	114	MC	02	1	763	0.47	0.01		0.17	0.26	0.34	0.22			0.34	0.37
2013_IAlg	114	MC	03	1	763	0.47	0.01		0.22	0.29	0.23	0.24			0.29	0.29
2013_IAlg	114	MC	04	1	763	0.47	0.01		0.41	0.37	0.11	0.10			0.37	0.28
2013_IAlg	114	MC	05	1	763	0.47	0.01		0.08	0.19	0.52	0.21			0.21	0.40
2013_IAlg	114	MC	06	1	763	0.47	0.01		0.17	0.12	0.06	0.65			0.65	0.50
2013_IAlg	114	MC	07	1	763	0.47	0.01		0.40	0.03	0.53	0.03			0.53	0.26
2013_IAlg	114	CR	08	2	763	0.47	0.09	0.46	0.14	0.31					0.76	0.66
2013_IAlg	114	CR	09													
2013_IAlg	114	CR	10	4	763	0.47	0.16	0.47	0.09	0.28	0.00	0.00			0.66	0.61
2013_IAlg	115	MC	01	1	770	0.45	0.01		0.36	0.19	0.21	0.23			0.21	0.38
2013_IAlg	115	MC	02	1	770	0.45	0.02		0.12	0.34	0.25	0.27			0.34	0.36
2013_IAlg	115	MC	03	1	770	0.45	0.01		0.06	0.60	0.30	0.04			0.30	0.44
2013_IAlg	115	MC	04	1	770	0.45	0.01		0.05	0.65	0.25	0.04			0.65	0.48
2013_IAlg	115	MC	05	1	770	0.45	0.02		0.24	0.21	0.39	0.14			0.39	0.40
2013_IAlg	115	MC	06	1	770	0.45	0.01		0.05	0.06	0.09	0.79			0.79	0.34
2013_IAlg	115	MC	07	1	770	0.45	0.02		0.27	0.34	0.12	0.25			0.25	0.43
2013_IAlg	115	CR	08	2	770	0.45	0.33	0.54	0.09	0.04					0.18	0.53
2013_IAlg	115	CR	09													
2013_IAlg	115	CR	10	2	770	0.45	0.19	0.63	0.16	0.03					0.21	0.49

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	116	MC	01	1	773	0.49	0.03		0.29	0.47	0.15	0.05			0.47	0.17
2013_IAlg	116	MC	02	1	773	0.49	0.01		0.58	0.04	0.34	0.03			0.58	0.46
2013_IAlg	116	MC	03	1	773	0.49	0.02		0.40	0.27	0.21	0.10			0.10	0.27
2013_IAlg	116	MC	04	1	773	0.49	0.01		0.27	0.29	0.29	0.13			0.29	0.40
2013_IAlg	116	MC	05	1	773	0.49	0.01		0.39	0.21	0.21	0.18			0.39	0.22
2013_IAlg	116	MC	06	1	773	0.49	0.01		0.08	0.24	0.59	0.09			0.59	0.46
2013_IAlg	116	MC	07	1	773	0.49	0.02		0.11	0.40	0.13	0.34			0.40	0.38
2013_IAlg	116	CR	08	2	773	0.49	0.17	0.47	0.28	0.08					0.44	0.58
2013_IAlg	116	CR	09	6	773	0.49	0.35	0.44	0.12	0.03	0.02	0.02	0.02	0.00	0.42	0.62
2013_IAlg	116	CR	10	2	773	0.49	0.17	0.55	0.12	0.15					0.42	0.54
2013_IAlg	117	MC	01	1	775	0.52	0.01		0.22	0.15	0.35	0.27			0.22	0.31
2013_IAlg	117	MC	02	1	775	0.52	0.01		0.28	0.34	0.23	0.14			0.23	0.34
2013_IAlg	117	MC	03	1	775	0.52	0.01		0.05	0.11	0.14	0.69			0.69	0.50
2013_IAlg	117	MC	04	1	775	0.52	0.01		0.09	0.13	0.07	0.70			0.70	0.50
2013_IAlg	117	MC	05	1	775	0.52	0.02		0.21	0.16	0.40	0.21			0.40	0.40
2013_IAlg	117	MC	06	1	775	0.52	0.01		0.25	0.22	0.17	0.35			0.35	0.49
2013_IAlg	117	MC	07	1	775	0.52	0.02		0.10	0.22	0.09	0.56			0.56	0.52
2013_IAlg	117	CR	08	2	775	0.52	0.08	0.28	0.23	0.42					1.07	0.69
2013_IAlg	117	CR	09													
2013_IAlg	117	CR	10	4	775	0.52	0.21	0.77	0.01	0.00	0.00	0.00			0.02	0.23
2013_IAlg	118	MC	01	1	783	0.56	0.01		0.32	0.22	0.33	0.12			0.12	0.27
2013_IAlg	118	MC	02	1	783	0.56	0.01		0.16	0.38	0.30	0.15			0.38	0.34
2013_IAlg	118	MC	03	1	783	0.56	0.01		0.18	0.46	0.13	0.22			0.46	0.35
2013_IAlg	118	MC	04	1	783	0.56	0.01		0.08	0.60	0.21	0.09			0.60	0.40
2013_IAlg	118	MC	05	1	783	0.56	0.02		0.12	0.23	0.46	0.17			0.46	0.40
2013_IAlg	118	MC	06	1	783	0.56	0.01		0.37	0.42	0.11	0.09			0.42	0.45
2013_IAlg	118	MC	07	1	783	0.56	0.06		0.20	0.32	0.29	0.13			0.29	0.14

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	118	CR	08	2	783	0.56	0.15	0.68	0.11	0.06					0.23	0.56
2013_IAlg	118	CR	09	2	783	0.56	0.27	0.48	0.16	0.09					0.34	0.57
2013_IAlg	118	CR	10	6	783	0.56	0.16	0.55	0.05	0.05	0.03	0.02	0.03	0.10	1.08	0.88
2013_IAlg	119	MC	01	1	786	0.58	0.01		0.12	0.20	0.28	0.39			0.39	0.40
2013_IAlg	119	MC	02	1	786	0.58	0.01		0.17	0.26	0.16	0.41			0.26	0.21
2013_IAlg	119	MC	03	1	786	0.58	0.01		0.40	0.14	0.35	0.09			0.35	0.30
2013_IAlg	119	MC	04	1	786	0.58	0.01		0.29	0.56	0.03	0.11			0.56	0.39
2013_IAlg	119	MC	05	1	786	0.58	0.02		0.17	0.29	0.37	0.16			0.37	0.29
2013_IAlg	119	MC	06	1	786	0.58	0.02		0.55	0.24	0.12	0.07			0.55	0.43
2013_IAlg	119	MC	07	1	786	0.58	0.02		0.26	0.44	0.17	0.11			0.44	0.47
2013_IAlg	119	CR	08	2	786	0.58	0.23	0.60	0.13	0.04					0.21	0.40
2013_IAlg	119	CR	09	6	786	0.58	0.15	0.41	0.10	0.12	0.06	0.08	0.04	0.03	1.29	0.83
2013_IAlg	119	CR	10	2	786	0.58	0.22	0.28	0.26	0.24					0.74	0.69
2013_IAlg	120	MC	01	1	769	0.46	0.00		0.32	0.19	0.39	0.09			0.32	0.33
2013_IAlg	120	MC	02	1	769	0.46	0.00		0.27	0.39	0.30	0.04			0.39	0.28
2013_IAlg	120	MC	03	1	769	0.46	0.01		0.40	0.19	0.22	0.18			0.40	0.49
2013_IAlg	120	MC	04	1	769	0.46	0.01		0.08	0.55	0.15	0.22			0.55	0.44
2013_IAlg	120	MC	05	1	769	0.46	0.01		0.10	0.09	0.49	0.30			0.49	0.38
2013_IAlg	120	MC	06	1	769	0.46	0.01		0.31	0.19	0.32	0.16			0.32	0.18
2013_IAlg	120	MC	07	1	769	0.46	0.03		0.20	0.23	0.40	0.15			0.40	0.32
2013_IAlg	120	CR	08	2	769	0.46	0.15	0.52	0.05	0.27					0.59	0.65
2013_IAlg	120	CR	09	4	769	0.46	0.21	0.52	0.19	0.02	0.01	0.05			0.46	0.62
2013_IAlg	120	CR	10	4	769	0.46	0.38	0.55	0.07	0.01	0.00	0.00			0.08	0.23
2013_IAlg	121	MC	01	1	781	0.49	0.00		0.06	0.05	0.86	0.02			0.86	0.36
2013_IAlg	121	MC	02	1	781	0.49	0.01		0.25	0.53	0.09	0.11			0.53	0.45
2013_IAlg	121	MC	03	1	781	0.49	0.02		0.21	0.15	0.44	0.17			0.44	0.43
2013_IAlg	121	MC	04	1	781	0.49	0.02		0.12	0.54	0.16	0.17			0.54	0.40

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	121	MC	05	1	781	0.49	0.01		0.43	0.16	0.30	0.09			0.30	0.41
2013_IAlg	121	MC	06	1	781	0.49	0.03		0.16	0.20	0.32	0.29			0.16	0.19
2013_IAlg	121	MC	07	1	781	0.49	0.03		0.17	0.18	0.21	0.41			0.41	0.46
2013_IAlg	121	CR	08	2	781	0.49	0.12	0.69	0.12	0.07					0.27	0.56
2013_IAlg	121	CR	09													
2013_IAlg	121	CR	10	2	781	0.49	0.09	0.74	0.04	0.13					0.31	0.61
2013_IAlg	122	MC	01	1	722	0.58	0.02		0.33	0.33	0.23	0.10			0.23	0.27
2013_IAlg	122	MC	02	1	722	0.58	0.01		0.36	0.16	0.16	0.31			0.31	0.27
2013_IAlg	122	MC	03	1	722	0.58	0.02		0.10	0.10	0.11	0.67			0.67	0.47
2013_IAlg	122	MC	04	1	722	0.58	0.01		0.12	0.67	0.13	0.06			0.67	0.47
2013_IAlg	122	MC	05	1	722	0.58	0.03		0.23	0.30	0.22	0.22			0.30	0.16
2013_IAlg	122	MC	06	1	722	0.58	0.02		0.43	0.06	0.05	0.44			0.44	0.52
2013_IAlg	122	MC	07	1	722	0.58	0.03		0.05	0.79	0.08	0.05			0.79	0.50
2013_IAlg	122	CR	08	2	722	0.58	0.10	0.64	0.19	0.07					0.33	0.52
2013_IAlg	122	CR	09	4	722	0.58	0.08	0.13	0.10	0.10	0.14	0.45			2.52	0.74
2013_IAlg	122	CR	10	4	722	0.58	0.23	0.52	0.11	0.06	0.02	0.06			0.51	0.65
2013_IAlg	123	MC	01	1	760	0.59	0.01		0.15	0.15	0.27	0.42			0.42	0.48
2013_IAlg	123	MC	02	1	760	0.59	0.01		0.37	0.50	0.09	0.02			0.50	0.25
2013_IAlg	123	MC	03	1	760	0.59	0.01		0.17	0.18	0.33	0.30			0.33	0.23
2013_IAlg	123	MC	04	1	760	0.59	0.01		0.15	0.32	0.40	0.12			0.40	0.28
2013_IAlg	123	MC	05	1	760	0.59	0.01		0.35	0.20	0.33	0.12			0.33	0.17
2013_IAlg	123	MC	06	1	760	0.59	0.03		0.05	0.62	0.19	0.12			0.62	0.42
2013_IAlg	123	MC	07	1	760	0.59	0.02		0.12	0.41	0.42	0.03			0.41	0.40
2013_IAlg	123	CR	08	2	760	0.59	0.12	0.54	0.12	0.22					0.56	0.66
2013_IAlg	123	CR	09	4	760	0.59	0.07	0.31	0.10	0.18	0.19	0.14			1.61	0.74
2013_IAlg	123	CR	10	4	760	0.59	0.26	0.40	0.11	0.15	0.07	0.01			0.68	0.71

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	124	MC	01	1	780	0.61	0.01		0.22	0.54	0.20	0.04			0.54	0.52
2013_IAlg	124	MC	02	1	780	0.61	0.00		0.59	0.09	0.26	0.06			0.59	0.48
2013_IAlg	124	MC	03	1	780	0.61	0.01		0.30	0.55	0.08	0.06			0.55	0.55
2013_IAlg	124	MC	04													
2013_IAlg	124	MC	05	1	780	0.61	0.01		0.11	0.31	0.10	0.48			0.48	0.42
2013_IAlg	124	MC	06	1	780	0.61	0.02		0.17	0.27	0.33	0.21			0.27	0.24
2013_IAlg	124	MC	07	1	780	0.61	0.02		0.12	0.46	0.12	0.28			0.46	0.45
2013_IAlg	124	CR	08	2	780	0.61	0.13	0.52	0.17	0.18					0.52	0.62
2013_IAlg	124	CR	09													
2013_IAlg	124	CR	10	4	780	0.61	0.14	0.51	0.07	0.12	0.06	0.09			0.86	0.81
2013_IAlg	125	MC	01	1	773	0.60	0.01		0.19	0.30	0.14	0.36			0.36	0.44
2013_IAlg	125	MC	02	1	773	0.60	0.01		0.14	0.25	0.39	0.22			0.39	0.42
2013_IAlg	125	MC	03	1	773	0.60	0.01		0.10	0.06	0.32	0.51			0.51	0.38
2013_IAlg	125	MC	04	1	773	0.60	0.01		0.09	0.18	0.20	0.51			0.51	0.41
2013_IAlg	125	MC	05	1	773	0.60	0.02		0.22	0.23	0.20	0.33			0.33	0.42
2013_IAlg	125	MC	06	1	773	0.60	0.02		0.43	0.11	0.16	0.28			0.43	0.49
2013_IAlg	125	MC	07													
2013_IAlg	125	CR	08	2	773	0.60	0.22	0.54	0.15	0.10					0.34	0.66
2013_IAlg	125	CR	09	4	773	0.60	0.16	0.60	0.03	0.04	0.08	0.08			0.70	0.80
2013_IAlg	125	CR	10	4	773	0.60	0.18	0.79	0.01	0.01	0.00	0.00			0.04	0.29
2013_IAlg	126	MC	01	1	774	0.52	0.01		0.24	0.42	0.17	0.16			0.42	0.43
2013_IAlg	126	MC	02	1	774	0.52	0.02		0.20	0.25	0.18	0.35			0.35	0.48
2013_IAlg	126	MC	03	1	774	0.52	0.01		0.14	0.63	0.16	0.06			0.63	0.41
2013_IAlg	126	MC	04	1	774	0.52	0.02		0.12	0.32	0.17	0.36			0.12	0.17
2013_IAlg	126	MC	05	1	774	0.52	0.02		0.22	0.18	0.28	0.30			0.22	0.31
2013_IAlg	126	MC	06	1	774	0.52	0.01		0.24	0.19	0.14	0.41			0.41	0.43
2013_IAlg	126	MC	07													

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	126	CR	08	2	774	0.52	0.29	0.46	0.05	0.21					0.47	0.61
2013_IAlg	126	CR	09	4	774	0.52	0.20	0.70	0.06	0.04	0.01	0.01			0.17	0.57
2013_IAlg	126	CR	10	4	774	0.52	0.14	0.69	0.07	0.08	0.02	0.01			0.31	0.56
2013_IAlg	127	MC	01	1	766	0.66	0.01		0.21	0.43	0.31	0.05			0.43	0.49
2013_IAlg	127	MC	02	1	766	0.66	0.00		0.10	0.24	0.11	0.54			0.54	0.41
2013_IAlg	127	MC	03	1	766	0.66	0.01		0.25	0.33	0.17	0.24			0.33	0.25
2013_IAlg	127	MC	04	1	766	0.66	0.01		0.43	0.19	0.20	0.16			0.43	0.45
2013_IAlg	127	MC	05	1	766	0.66	0.01		0.09	0.20	0.19	0.51			0.51	0.53
2013_IAlg	127	MC	06	1	766	0.66	0.01		0.11	0.27	0.31	0.29			0.29	0.39
2013_IAlg	127	MC	07	1	766	0.66	0.01		0.20	0.57	0.10	0.12			0.57	0.48
2013_IAlg	127	CR	08	4	766	0.66	0.09	0.37	0.18	0.16	0.09	0.11			1.22	0.77
2013_IAlg	127	CR	09	2	766	0.66	0.25	0.58	0.12	0.05					0.22	0.53
2013_IAlg	127	CR	10	4	766	0.66	0.21	0.59	0.04	0.04	0.05	0.07			0.54	0.69
2013_IAlg	128	MC	01	1	756	0.43	0.00		0.50	0.10	0.22	0.18			0.22	0.39
2013_IAlg	128	MC	02	1	756	0.43	0.01		0.13	0.18	0.44	0.24			0.44	0.41
2013_IAlg	128	MC	03	1	756	0.43	0.01		0.11	0.40	0.36	0.13			0.40	0.44
2013_IAlg	128	MC	04													
2013_IAlg	128	MC	05	1	756	0.43	0.02		0.21	0.22	0.35	0.21			0.22	0.14
2013_IAlg	128	MC	06	1	756	0.43	0.02		0.14	0.10	0.16	0.58			0.58	0.41
2013_IAlg	128	MC	07	1	756	0.43	0.05		0.37	0.22	0.18	0.17			0.18	0.18
2013_IAlg	128	CR	08	2	756	0.43	0.14	0.54	0.23	0.09					0.42	0.60
2013_IAlg	128	CR	09	4	756	0.43	0.22	0.56	0.03	0.03	0.04	0.12			0.69	0.78
2013_IAlg	128	CR	10													
2013_IAlg	129	MC	01	1	780	0.61	0.03		0.50	0.11	0.28	0.08			0.08	0.12
2013_IAlg	129	MC	02	1	780	0.61	0.02		0.41	0.20	0.22	0.15			0.41	0.42
2013_IAlg	129	MC	03	1	780	0.61	0.02		0.33	0.32	0.22	0.09			0.33	0.40
2013_IAlg	129	MC	04	1	780	0.61	0.01		0.15	0.16	0.57	0.10			0.10	0.17

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	129	MC	05	1	780	0.61	0.01		0.05	0.06	0.09	0.79			0.79	0.43
2013_IAlg	129	MC	06	1	780	0.61	0.02		0.27	0.46	0.10	0.15			0.46	0.29
2013_IAlg	129	MC	07	1	780	0.61	0.02		0.13	0.37	0.41	0.06			0.41	0.47
2013_IAlg	129	CR	08	4	780	0.61	0.15	0.61	0.08	0.07	0.01	0.07			0.56	0.73
2013_IAlg	129	CR	09	2	780	0.61	0.14	0.64	0.14	0.08					0.30	0.55
2013_IAlg	129	CR	10	4	780	0.61	0.21	0.34	0.17	0.05	0.12	0.12			1.08	0.79
2013_IAlg	130	MC	01	1	761	0.55	0.02		0.20	0.21	0.20	0.37			0.20	0.32
2013_IAlg	130	MC	02	1	761	0.55	0.01		0.06	0.68	0.15	0.10			0.15	0.07
2013_IAlg	130	MC	03	1	761	0.55	0.01		0.14	0.05	0.75	0.05			0.75	0.36
2013_IAlg	130	MC	04	1	761	0.55	0.01		0.09	0.11	0.72	0.07			0.72	0.31
2013_IAlg	130	MC	05	1	761	0.55	0.02		0.23	0.37	0.19	0.20			0.37	0.29
2013_IAlg	130	MC	06	1	761	0.55	0.03		0.14	0.13	0.18	0.52			0.14	0.29
2013_IAlg	130	MC	07	1	761	0.55	0.02		0.36	0.20	0.33	0.09			0.20	0.30
2013_IAlg	130	CR	08	2	761	0.55	0.22	0.57	0.10	0.11					0.32	0.62
2013_IAlg	130	CR	09	4	761	0.55	0.11	0.35	0.27	0.08	0.06	0.13			1.13	0.75
2013_IAlg	130	CR	10	6	761	0.55	0.25	0.60	0.06	0.03	0.02	0.01	0.01	0.02	0.41	0.74
2013_IAlg	131	MC	01	1	754	0.57	0.01		0.48	0.15	0.16	0.20			0.48	0.32
2013_IAlg	131	MC	02	1	754	0.57	0.01		0.31	0.25	0.11	0.33			0.31	0.44
2013_IAlg	131	MC	03	1	754	0.57	0.00		0.10	0.07	0.81	0.02			0.81	0.40
2013_IAlg	131	MC	04	1	754	0.57	0.01		0.18	0.65	0.12	0.05			0.65	0.43
2013_IAlg	131	MC	05	1	754	0.57	0.01		0.19	0.70	0.05	0.05			0.70	0.28
2013_IAlg	131	MC	06	1	754	0.57	0.03		0.24	0.31	0.25	0.17			0.31	0.38
2013_IAlg	131	MC	07	1	754	0.57	0.04		0.34	0.20	0.29	0.13			0.29	0.16
2013_IAlg	131	CR	08	2	754	0.57	0.12	0.56	0.19	0.13					0.45	0.58
2013_IAlg	131	CR	09	6	754	0.57	0.30	0.28	0.15	0.13	0.06	0.03	0.03	0.03	0.98	0.79
2013_IAlg	131	CR	10	2	754	0.57	0.17	0.56	0.12	0.15					0.42	0.60



Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	132	MC	01													
2013_IAlg	132	MC	02	1	740	0.47	0.01		0.10	0.40	0.10	0.39			0.39	0.28
2013_IAlg	132	MC	03	1	740	0.47	0.01		0.16	0.13	0.57	0.13			0.57	0.29
2013_IAlg	132	MC	04	1	740	0.47	0.01		0.21	0.31	0.21	0.25			0.21	0.16
2013_IAlg	132	MC	05	1	740	0.47	0.02		0.15	0.13	0.50	0.19			0.50	0.38
2013_IAlg	132	MC	06	1	740	0.47	0.03		0.19	0.38	0.21	0.19			0.38	0.29
2013_IAlg	132	MC	07	1	740	0.47	0.05		0.27	0.23	0.34	0.11			0.27	0.20
2013_IAlg	132	CR	08	2	740	0.47	0.28	0.58	0.05	0.10					0.24	0.53
2013_IAlg	132	CR	09	6	740	0.47	0.14	0.35	0.10	0.08	0.08	0.07	0.09	0.08	1.73	0.87
2013_IAlg	132	CR	10	2	740	0.47	0.27	0.36	0.24	0.14					0.51	0.64
2013_IAlg	133	MC	01	1	718	0.47	0.00		0.49	0.23	0.21	0.07			0.21	0.24
2013_IAlg	133	MC	02	1	718	0.47	0.03		0.12	0.25	0.34	0.27			0.27	0.18
2013_IAlg	133	MC	03	1	718	0.47	0.03		0.15	0.26	0.26	0.31			0.31	0.31
2013_IAlg	133	MC	04	1	718	0.47	0.02		0.28	0.23	0.19	0.28			0.28	0.32
2013_IAlg	133	MC	05	1	718	0.47	0.03		0.44	0.17	0.27	0.09			0.44	0.46
2013_IAlg	133	MC	06	1	718	0.47	0.01		0.11	0.43	0.36	0.09			0.36	0.41
2013_IAlg	133	MC	07	1	718	0.47	0.05		0.19	0.32	0.26	0.19			0.32	0.21
2013_IAlg	133	CR	08	2	718	0.47	0.18	0.66	0.10	0.06					0.22	0.43
2013_IAlg	133	CR	09	2	718	0.47	0.27	0.41	0.12	0.21					0.53	0.54
2013_IAlg	133	CR	10	6	718	0.47	0.16	0.47	0.08	0.09	0.03	0.07	0.05	0.06	1.21	0.83
2013_IAlg	134	MC	01	1	745	0.44	0.00		0.28	0.44	0.16	0.12			0.44	0.40
2013_IAlg	134	MC	02	1	745	0.44	0.00		0.05	0.04	0.84	0.07			0.04	0.02
2013_IAlg	134	MC	03	1	745	0.44	0.01		0.59	0.09	0.06	0.25			0.59	0.42
2013_IAlg	134	MC	04													
2013_IAlg	134	MC	05	1	745	0.44	0.01		0.33	0.44	0.12	0.10			0.44	0.34
2013_IAlg	134	MC	06	1	745	0.44	0.01		0.21	0.38	0.20	0.20			0.38	0.32
2013_IAlg	134	MC	07	1	745	0.44	0.03		0.17	0.31	0.37	0.11			0.11	0.24

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	M5	M6	Mean	Point-Biserial
2013_IAlg	134	CR	08	4	745	0.44	0.22	0.36	0.07	0.16	0.15	0.04			1.00	0.75
2013_IAlg	134	CR	09	4	745	0.44	0.15	0.60	0.16	0.03	0.01	0.06			0.47	0.67
2013_IAlg	134	CR	10	2	745	0.44	0.30	0.68	0.01	0.01					0.03	0.27
2013_IAlg	135	MC	01	1	759	0.55	0.01		0.19	0.17	0.39	0.23			0.39	0.25
2013_IAlg	135	MC	02	1	759	0.55	0.01		0.17	0.47	0.11	0.23			0.47	0.45
2013_IAlg	135	MC	03	1	759	0.55	0.01		0.09	0.33	0.52	0.05			0.52	0.38
2013_IAlg	135	MC	04	1	759	0.55	0.01		0.21	0.28	0.13	0.38			0.38	0.40
2013_IAlg	135	MC	05	1	759	0.55	0.02		0.26	0.14	0.12	0.45			0.45	0.48
2013_IAlg	135	MC	06	1	759	0.55	0.03		0.27	0.18	0.39	0.14			0.39	0.49
2013_IAlg	135	MC	07	1	759	0.55	0.02		0.12	0.32	0.41	0.14			0.41	0.30
2013_IAlg	135	CR	08	4	759	0.55	0.19	0.76	0.03	0.01	0.00	0.00			0.08	0.35
2013_IAlg	135	CR	09	4	759	0.55	0.13	0.31	0.25	0.09	0.05	0.17			1.27	0.81
2013_IAlg	135	CR	10	2	759	0.55	0.18	0.46	0.35	0.01					0.37	0.44

## Appendix B: Inter-Rater Consistency – Point Differences Between First and Second Reads

The first three columns from the left contain the form ID, item sequence number, and number of score points for each item. The remaining columns contain the percentage of times each possible difference between the first and second raters' scores occurred. Blank cells indicate out-of-range differences (e.g., differences greater than the maximum possible given the point value of that particular item).

Form	Item	Score Pts	Difference (First Read Minus Second Read)												
			-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
101	8	2					0%	5%	83%	12%	0%				
101	9	3				0%	3%	12%	71%	12%	2%	0%			
101	10	4			0%	0%	1%	5%	91%	4%	0%	0%	0%		
102	9	2					0%	5%	91%	4%	0%				
103	8	2					0%	6%	90%	4%	0%				
103	9	2					0%	4%	92%	3%	1%				
103	10	4			0%	0%	2%	3%	88%	4%	3%	0%	0%		
104	8	2					0%	2%	98%	1%	0%				
104	9	4			0%	0%	2%	3%	90%	2%	2%	0%	0%		
105	8	4			0%	0%	2%	11%	75%	9%	2%	0%	0%		
105	9	2					0%	7%	88%	5%	0%				
105	10	4			0%	0%	0%	0%	97%	3%	0%	0%	0%		
106	8	4			0%	0%	1%	2%	91%	3%	2%	0%	0%		
106	9	4			0%	0%	3%	11%	76%	8%	2%	0%	0%		
106	10	2					0%	5%	87%	8%	0%				
107	8	2					0%	6%	88%	6%	0%				
107	10	4			0%	0%	4%	7%	80%	6%	2%	0%	0%		
108	8	2					1%	6%	89%	3%	1%				
108	9	2					0%	3%	92%	6%	0%				
108	10	4			0%	0%	1%	8%	80%	10%	1%	0%	0%		
109	8	4			0%	0%	3%	11%	70%	13%	3%	0%	0%		
109	9	6	0%	0%	0%	0%	1%	7%	85%	8%	0%	0%	0%	0%	0%
110	8	2					1%	13%	69%	14%	3%				
110	9	6	0%	0%	0%	0%	1%	9%	84%	5%	1%	0%	0%	0%	0%
110	10	2					1%	5%	86%	8%	0%				
111	8	2					0%	5%	89%	5%	1%				
111	9	2					0%	7%	86%	7%	0%				
112	8	4			0%	0%	3%	6%	83%	8%	1%	0%	0%		
112	9	2					0%	6%	92%	2%	0%				

Form	Item	Score Pts	Difference (First Read Minus Second Read)												
			-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
112	10	4			0%	0%	1%	9%	79%	10%	1%	0%	0%		
113	8	2					0%	4%	88%	7%	1%				
113	9	6	0%	0%	0%	0%	0%	14%	77%	9%	1%	0%	0%	0%	0%
113	10	2					0%	8%	86%	5%	0%				
114	8	2					0%	6%	90%	4%	0%				
114	10	4			0%	0%	1%	4%	89%	6%	1%	0%	0%		
115	8	2					0%	4%	92%	4%	0%				
115	10	2					0%	4%	91%	5%	0%				
116	8	2					1%	12%	77%	10%	0%				
116	9	6	0%	0%	0%	0%	2%	2%	93%	2%	2%	0%	0%	0%	0%
116	10	2					1%	7%	82%	10%	0%				
117	8	2					0%	10%	79%	11%	0%				
117	10	4			0%	0%	0%	0%	98%	1%	1%	0%	0%		
118	8	2					0%	3%	92%	5%	0%				
118	9	2					0%	6%	85%	8%	1%				
118	10	6	0%	0%	0%	0%	2%	5%	81%	9%	3%	0%	0%	0%	0%
119	8	2					0%	5%	93%	1%	0%				
119	9	6	0%	0%	0%	0%	5%	12%	65%	12%	5%	0%	0%	0%	0%
119	10	2					0%	5%	92%	3%	0%				
120	8	2					0%	4%	95%	1%	0%				
120	9	4			0%	0%	1%	4%	93%	2%	0%	0%	0%		
120	10	4			0%	0%	0%	3%	92%	5%	1%	0%	0%		
121	8	2					1%	6%	87%	6%	0%				
121	10	2					0%	4%	96%	1%	0%				
122	8	2					0%	7%	85%	8%	0%				
122	9	4			0%	0%	5%	17%	65%	9%	3%	0%	0%		
122	10	4			0%	0%	1%	11%	77%	7%	4%	0%	0%		
123	8	2					0%	0%	95%	5%	0%				
123	9	4			0%	0%	7%	14%	61%	10%	8%	0%	0%		
123	10	4			0%	0%	0%	2%	96%	1%	0%	0%	0%		
124	8	2					0%	2%	94%	4%	0%				
124	10	4			0%	0%	3%	10%	75%	9%	4%	0%	0%		
125	8	2					0%	8%	87%	4%	0%				
125	9	4			0%	0%	1%	6%	89%	2%	1%	0%	0%		
125	10	4			0%	0%	1%	2%	97%	0%	1%	0%	0%		
126	8	2					1%	3%	95%	2%	0%				
126	9	4			0%	0%	1%	1%	94%	4%	0%	0%	0%		
126	10	4			0%	0%	3%	6%	85%	6%	0%	0%	0%		

Form	Item	Score Pts	Difference (First Read Minus Second Read)												
			-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
127	8	4			0%	0%	0%	8%	81%	9%	1%	0%	0%		
127	9	2					0%	1%	93%	4%	1%				
127	10	4			0%	0%	3%	1%	89%	3%	4%	0%	0%		
128	8	2					0%	10%	83%	7%	0%				
128	9	4			0%	0%	1%	5%	88%	5%	2%	0%	0%		
129	8	4			0%	0%	1%	4%	85%	6%	4%	0%	0%		
129	9	2					0%	4%	92%	3%	0%				
129	10	4			0%	0%	2%	3%	86%	9%	1%	0%	0%		
130	8	2					0%	6%	88%	6%	0%				
130	9	4			0%	0%	2%	9%	80%	7%	2%	0%	0%		
130	10	6	0%	0%	0%	0%	1%	3%	93%	3%	0%	0%	0%	0%	0%
131	8	2					1%	5%	90%	4%	0%				
131	9	6	0%	0%	0%	0%	5%	10%	71%	12%	1%	0%	0%	0%	0%
131	10	2					0%	2%	92%	4%	2%				
132	8	2					0%	1%	94%	4%	1%				
132	9	6	0%	0%	0%	0%	4%	8%	70%	13%	4%	0%	0%	0%	0%
132	10	2					0%	2%	93%	4%	0%				
133	8	2					0%	9%	86%	4%	1%				
133	9	2					0%	6%	89%	6%	0%				
133	10	6	0%	0%	0%	0%	4%	7%	78%	9%	2%	0%	0%	0%	0%
134	8	4			0%	0%	0%	6%	85%	9%	0%	0%	0%		
134	9	4			0%	0%	0%	4%	91%	5%	0%	0%	0%		
134	10	2					0%	0%	100%	0%	0%				
135	8	4			0%	0%	0%	0%	97%	2%	1%	0%	0%		
135	9	4			0%	0%	1%	7%	79%	11%	1%	0%	0%		
135	10	2					0%	9%	81%	10%	0%				

## Appendix C: Additional Measures of Inter-Rater Reliability and Agreement

The first four columns from the left contain the form ID, item sequence number, number of score points, and the total count of items receiving a first and second read. In the fifth column the percent of exact matches between the first and second scores is provided. The following column (“Adj.”) is the percentage of the first and second scores with a difference of –1 or 1. “Total” is the sum of Exact and Adjacent matches (e.g., the two prior columns).

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr	Wt Kappa
				Exact	Adj	Total	First Read	Second Read	First Read	Second Read		
101	8	2	136	83.1%	16.9%	100.0%	0.7	0.6	0.80	0.76	0.86	0.79
101	9	3	130	70.8%	24.6%	95.4%	1.1	1.1	1.18	1.17	0.84	0.73
101	10	4	132	90.9%	8.3%	99.2%	0.4	0.5	0.76	0.81	0.91	0.86
102	9	2	138	91.3%	8.7%	100.0%	0.7	0.8	0.88	0.90	0.95	0.91
103	8	2	141	90.1%	9.9%	100.0%	0.4	0.4	0.62	0.64	0.87	0.83
103	9	2	131	92.4%	6.9%	99.2%	0.1	0.1	0.33	0.30	0.51	0.55
103	10	4	139	88.5%	6.5%	95.0%	0.7	0.6	1.31	1.31	0.92	0.85
104	8	2	133	97.7%	2.3%	100.0%	0.0	0.0	0.26	0.27	0.84	0.72
104	9	4	131	90.1%	5.3%	95.4%	0.7	0.7	0.94	0.95	0.87	0.84
105	8	4	140	75.0%	20.7%	95.7%	1.1	1.1	1.30	1.35	0.89	0.79
105	9	2	147	88.4%	11.6%	100.0%	1.4	1.4	0.83	0.80	0.91	0.86
105	10	4	136	97.1%	2.9%	100.0%	0.2	0.2	0.50	0.47	0.94	0.90
106	8	4	141	91.5%	5.0%	96.5%	0.3	0.3	0.93	0.89	0.88	0.78
106	9	4	138	76.1%	18.8%	94.9%	1.5	1.6	1.58	1.60	0.92	0.83
106	10	2	128	86.7%	13.3%	100.0%	0.2	0.2	0.49	0.48	0.72	0.64
107	8	2	139	87.8%	12.2%	100.0%	0.4	0.4	0.70	0.69	0.87	0.80
107	10	4	139	79.9%	13.7%	93.5%	1.2	1.3	1.51	1.59	0.92	0.83
108	8	2	147	89.1%	9.5%	98.6%	0.5	0.5	0.74	0.74	0.86	0.83
108	9	2	142	91.5%	8.5%	100.0%	0.9	0.9	0.95	0.98	0.95	0.91

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr	Wt Kappa
				Exact	Adj	Total	First Read	Second Read	First Read	Second Read		
108	10	4	147	80.3%	17.7%	98.0%	2.0	2.0	1.56	1.57	0.95	0.88
109	8	4	144	70.1%	23.6%	93.8%	1.0	1.0	1.29	1.25	0.85	0.72
109	9	6	136	84.6%	14.7%	99.3%	0.2	0.2	0.39	0.44	0.49	0.43
110	8	2	147	68.7%	27.2%	95.9%	1.3	1.2	0.84	0.84	0.69	0.60
110	9	6	142	83.8%	14.1%	97.9%	0.7	0.8	1.30	1.30	0.93	0.84
110	10	2	140	86.4%	12.9%	99.3%	0.5	0.5	0.74	0.74	0.86	0.80
111	8	2	147	89.1%	9.5%	98.6%	0.8	0.7	0.71	0.71	0.85	0.84
111	9	2	135	85.9%	14.1%	100.0%	1.0	1.0	0.89	0.89	0.91	0.85
112	8	4	143	82.5%	13.3%	95.8%	0.5	0.5	0.79	0.82	0.77	0.71
112	9	2	140	92.1%	7.9%	100.0%	0.8	0.8	0.87	0.88	0.95	0.91
112	10	4	140	79.3%	19.3%	98.6%	1.0	1.0	1.11	1.11	0.90	0.81
113	8	2	136	88.2%	11.0%	99.3%	0.5	0.5	0.81	0.79	0.89	0.83
113	9	6	133	76.7%	22.6%	99.2%	0.5	0.6	1.06	1.03	0.88	0.72
113	10	2	131	86.3%	13.7%	100.0%	0.6	0.6	0.69	0.69	0.86	0.80
114	8	2	145	90.3%	9.7%	100.0%	0.8	0.8	0.90	0.91	0.94	0.90
114	10	4	138	89.1%	9.4%	98.6%	0.7	0.6	0.91	0.89	0.91	0.86
115	8	2	138	92.0%	8.0%	100.0%	0.1	0.1	0.40	0.40	0.75	0.67
115	10	2	145	91.0%	9.0%	100.0%	0.2	0.2	0.46	0.44	0.77	0.71
116	8	2	139	77.0%	22.3%	99.3%	0.5	0.6	0.69	0.67	0.73	0.66
116	9	6	133	93.2%	3.8%	97.0%	0.4	0.4	1.04	1.01	0.92	0.86
116	10	2	130	82.3%	16.9%	99.2%	0.3	0.3	0.65	0.66	0.77	0.64
117	8	2	146	79.5%	20.5%	100.0%	1.0	1.0	0.88	0.89	0.87	0.78
117	10	4	135	97.8%	1.5%	99.3%	0.1	0.0	0.33	0.26	0.75	0.60
118	8	2	142	92.3%	7.7%	100.0%	0.3	0.3	0.59	0.57	0.89	0.83
118	9	2	135	85.2%	14.1%	99.3%	0.3	0.3	0.62	0.59	0.77	0.67

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr	Wt Kappa
				Exact	Adj	Total	First Read	Second Read	First Read	Second Read		
118	10	6	136	80.9%	14.0%	94.9%	1.2	1.1	2.01	2.01	0.96	0.87
119	8	2	134	93.3%	6.7%	100.0%	0.3	0.3	0.59	0.60	0.91	0.86
119	9	6	146	65.1%	24.0%	89.0%	1.2	1.2	1.64	1.66	0.87	0.72
119	10	2	149	91.9%	8.1%	100.0%	0.7	0.7	0.78	0.80	0.94	0.90
120	8	2	141	95.0%	5.0%	100.0%	0.5	0.6	0.87	0.87	0.97	0.94
120	9	4	138	92.8%	5.8%	98.6%	0.4	0.4	0.70	0.75	0.89	0.85
120	10	4	133	91.7%	7.5%	99.2%	0.1	0.1	0.36	0.30	0.53	0.50
121	8	2	141	87.2%	12.1%	99.3%	0.3	0.3	0.63	0.64	0.82	0.75
121	10	2	141	95.7%	4.3%	100.0%	0.4	0.4	0.76	0.80	0.97	0.93
122	8	2	130	85.4%	14.6%	100.0%	0.3	0.3	0.58	0.60	0.79	0.70
122	9	4	128	64.8%	26.6%	91.4%	2.6	2.7	1.53	1.58	0.87	0.74
122	10	4	137	77.4%	18.2%	95.6%	0.6	0.6	1.20	1.21	0.88	0.71
123	8	2	132	95.5%	4.5%	100.0%	0.6	0.5	0.85	0.82	0.97	0.94
123	9	4	144	61.1%	23.6%	84.7%	1.6	1.6	1.52	1.44	0.81	0.67
123	10	4	139	96.4%	3.6%	100.0%	0.5	0.5	0.97	0.97	0.98	0.96
124	8	2	141	93.6%	6.4%	100.0%	0.6	0.5	0.79	0.77	0.95	0.92
124	10	4	142	74.6%	19.0%	93.7%	0.9	0.9	1.30	1.40	0.88	0.75
125	8	2	134	87.3%	12.7%	100.0%	0.4	0.4	0.66	0.69	0.86	0.79
125	9	4	135	88.9%	8.1%	97.0%	0.9	0.9	1.44	1.47	0.95	0.89
125	10	4	133	97.0%	1.5%	98.5%	0.1	0.1	0.40	0.41	0.77	0.62
126	8	2	129	94.6%	4.7%	99.2%	0.6	0.6	0.87	0.88	0.95	0.92
126	9	4	134	94.0%	5.2%	99.3%	0.3	0.3	0.83	0.82	0.94	0.87
126	10	4	143	85.3%	11.9%	97.2%	0.3	0.3	0.71	0.76	0.79	0.66
127	8	4	140	81.4%	17.1%	98.6%	1.1	1.1	1.35	1.33	0.94	0.86
127	9	2	138	92.8%	5.8%	98.6%	0.3	0.3	0.59	0.50	0.81	0.81



Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr	Wt Kappa
				Exact	Adj	Total	First Read	Second Read	First Read	Second Read		
127	10	4	142	89.4%	4.2%	93.7%	0.6	0.5	1.23	1.19	0.90	0.82
128	8	2	143	82.5%	17.5%	100.0%	0.4	0.5	0.64	0.64	0.78	0.72
128	9	4	131	87.8%	9.9%	97.7%	0.6	0.5	1.28	1.24	0.94	0.85
129	8	4	141	85.1%	9.9%	95.0%	0.3	0.3	0.86	0.74	0.77	0.64
129	9	2	146	92.5%	7.5%	100.0%	0.3	0.3	0.63	0.61	0.90	0.85
129	10	4	138	85.5%	11.6%	97.1%	0.9	0.9	1.39	1.34	0.94	0.86
130	8	2	133	88.0%	12.0%	100.0%	0.3	0.3	0.61	0.64	0.85	0.75
130	9	4	140	80.0%	15.7%	95.7%	1.4	1.4	1.47	1.46	0.92	0.84
130	10	6	135	92.6%	5.9%	98.5%	0.5	0.5	1.33	1.38	0.97	0.90
131	8	2	133	90.2%	9.0%	99.2%	0.4	0.4	0.66	0.68	0.87	0.83
131	9	6	135	71.1%	22.2%	93.3%	0.9	1.0	1.58	1.56	0.90	0.75
131	10	2	132	91.7%	6.1%	97.7%	0.4	0.3	0.75	0.71	0.86	0.83
132	8	2	137	94.2%	5.1%	99.3%	0.3	0.2	0.64	0.61	0.90	0.85
132	9	6	134	70.1%	21.6%	91.8%	1.6	1.6	2.05	1.98	0.93	0.82
132	10	2	137	93.4%	6.6%	100.0%	0.6	0.5	0.74	0.75	0.94	0.91
133	8	2	125	86.4%	12.8%	99.2%	0.2	0.3	0.56	0.56	0.75	0.67
133	9	2	126	88.9%	11.1%	100.0%	0.5	0.5	0.79	0.79	0.91	0.85
133	10	6	124	78.2%	16.1%	94.4%	1.2	1.2	1.88	1.83	0.94	0.84
134	8	4	132	84.8%	15.2%	100.0%	0.9	0.9	1.25	1.24	0.95	0.88
134	9	4	131	90.8%	9.2%	100.0%	0.5	0.5	1.08	1.12	0.96	0.89
134	10	2	124	100.0%	0.0%	100.0%	0.0	0.0	0.00	0.00	N/A	N/A
135	8	4	137	97.1%	2.2%	99.3%	0.1	0.1	0.50	0.45	0.89	0.81
135	9	4	142	78.9%	18.3%	97.2%	1.3	1.3	1.47	1.46	0.93	0.84
135	10	2	140	80.7%	19.3%	100.0%	0.4	0.4	0.50	0.50	0.62	0.60

## Appendix D: Partial-Credit Model Item Analysis

The first five columns from the left contain the test name, form name, item type, item number on the form, and maximum points possible for the item. The sixth column contains the number of students that the item was administered to. The remaining eight columns contain the Rasch Item Difficulty, step difficulties (for multi-point items only), and the INFIT Rasch model fit statistic. Items without statistics are DNS (Do Not Score) status items.

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	101	MC	01	1	759	-0.2000							1.01
2013_IAlg	101	MC	02	1	759	-0.3500							0.95
2013_IAlg	101	MC	03	1	759	-1.3200							0.90
2013_IAlg	101	MC	04	1	759	-0.0500							1.10
2013_IAlg	101	MC	05	1	759	1.3400							1.19
2013_IAlg	101	MC	06	1	759	-0.2400							1.04
2013_IAlg	101	MC	07	1	759	0.6400							1.06
2013_IAlg	101	CR	08	2	759	0.6800	0.3700	-0.3700					0.76
2013_IAlg	101	CR	09	3	759	0.4800	0.2000	-0.0200	-0.1800				0.83
2013_IAlg	101	CR	10	4	759	1.1100	0.4800	-0.4800	45.3122	-40.0000			0.96
2013_IAlg	102	MC	01	1	759	-0.2498							1.06
2013_IAlg	102	MC	02	1	759	-0.8541							0.90
2013_IAlg	102	MC	03	1	759	0.6579							1.10
2013_IAlg	102	MC	04	1	759	-0.5340							0.97
2013_IAlg	102	MC	05	1	759	0.7421							1.06
2013_IAlg	102	MC	06	1	759	0.6643							1.02
2013_IAlg	102	MC	07	1	759	-0.0934							1.00
2013_IAlg	102	MC	08	1	759	-0.1396							1.02
2013_IAlg	102	CR	09	2	759	0.3177	0.3924	-0.3924					0.87
2013_IAlg	102	CR	10										

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	103	MC	01	1	764	1.6824							1.17
2013_IAlg	103	MC	02	1	764	1.0879							0.94
2013_IAlg	103	MC	03	1	764	0.3246							1.16
2013_IAlg	103	MC	04	1	764	0.5051							1.17
2013_IAlg	103	MC	05	1	764	-0.4092							1.03
2013_IAlg	103	MC	06	1	764	-0.7218							0.93
2013_IAlg	103	MC	07	1	764	0.0228							0.88
2013_IAlg	103	CR	08	2	764	1.2829	-0.0260	0.0260					1.00
2013_IAlg	103	CR	09	2	764	2.9851	-0.6639	0.6639					0.96
2013_IAlg	103	CR	10	4	764	0.8879	1.3295	-0.5451	-0.5609	-0.2234			0.73
2013_IAlg	104	MC	01										
2013_IAlg	104	MC	02	1	753	-0.0933							1.08
2013_IAlg	104	MC	03	1	753	1.1047							1.02
2013_IAlg	104	MC	04	1	753	1.5595							1.10
2013_IAlg	104	MC	05	1	753	0.2005							1.01
2013_IAlg	104	MC	06	1	753	-0.4135							0.96
2013_IAlg	104	MC	07	1	753	0.1114							0.97
2013_IAlg	104	CR	08	2	753	3.7598	0.4191	-0.4191					0.96
2013_IAlg	104	CR	09	4	753	1.8342	-0.0094	-3.5372	3.5465				0.85
2013_IAlg	104	CR	10										
2013_IAlg	105	MC	01	1	775	-0.0565							1.04
2013_IAlg	105	MC	02	1	775	1.1547							1.08
2013_IAlg	105	MC	03	1	775	0.0494							1.06
2013_IAlg	105	MC	04										
2013_IAlg	105	MC	05	1	775	0.0619							1.14
2013_IAlg	105	MC	06	1	775	-0.0813							1.10
2013_IAlg	105	MC	07	1	775	-0.7926							0.94
2013_IAlg	105	CR	08	4	775	0.9073	0.7185	-1.8147	-0.2375	1.3337			0.73

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	105	CR	09	2	775	-1.1152	0.0320	-0.0320					0.86
2013_IAlg	105	CR	10	4	775	2.5815	-0.4455	1.8941	41.8941	-43.3430			0.88
2013_IAlg	106	MC	01	1	776	-2.6726							0.98
2013_IAlg	106	MC	02	1	776	0.3090							0.98
2013_IAlg	106	MC	03	1	776	0.7958							1.21
2013_IAlg	106	MC	04	1	776	0.5140							1.18
2013_IAlg	106	MC	05	1	776	-0.7149							0.99
2013_IAlg	106	MC	06	1	776	-1.2058							0.98
2013_IAlg	106	MC	07	1	776	0.6427							1.08
2013_IAlg	106	CR	08	4	776	1.6935	1.2020	0.3694	-0.4924	-1.0790			0.71
2013_IAlg	106	CR	09	4	776	0.4226	-0.1069	0.0981	-0.1689	0.1777			0.77
2013_IAlg	106	CR	10	2	776	2.3319	-0.7592	0.7592					0.85
2013_IAlg	107	MC	01	1	787	-0.3006							1.10
2013_IAlg	107	MC	02	1	787	-1.9706							0.98
2013_IAlg	107	MC	03	1	787	0.3954							1.02
2013_IAlg	107	MC	04	1	787	-0.7152							0.97
2013_IAlg	107	MC	05	1	787	0.4015							1.05
2013_IAlg	107	MC	06	1	787	-0.2405							1.11
2013_IAlg	107	MC	07	1	787	0.0516							1.07
2013_IAlg	107	CR	08	2	787	1.3057	0.1699	-0.1699					0.95
2013_IAlg	107	CR	09										
2013_IAlg	107	CR	10	4	787	0.5748	0.8767	-1.3332	1.0317	-0.5752			0.70
2013_IAlg	108	MC	01	1	780	1.9636							1.03
2013_IAlg	108	MC	02	1	780	0.5912							1.17
2013_IAlg	108	MC	03	1	780	-0.2201							0.95
2013_IAlg	108	MC	04	1	780	0.8311							1.07
2013_IAlg	108	MC	05	1	780	0.6564							1.13
2013_IAlg	108	MC	06	1	780	-1.4517							0.94

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	108	MC	07	1	780	-1.4936							0.95
2013_IAlg	108	CR	08	2	780	0.8735	-0.0638	0.0638					1.00
2013_IAlg	108	CR	09	2	780	0.0912	1.5133	-1.5133					0.92
2013_IAlg	108	CR	10	4	780	-0.0999	-0.3582	-0.3728	1.4552	-0.7242			0.80
2013_IAlg	109	MC	01	1	771	0.8772							1.14
2013_IAlg	109	MC	02	1	771	-0.3932							0.95
2013_IAlg	109	MC	03	1	771	1.3786							1.14
2013_IAlg	109	MC	04	1	771	1.2002							1.07
2013_IAlg	109	MC	05	1	771	-2.3489							1.05
2013_IAlg	109	MC	06	1	771	-0.6943							0.95
2013_IAlg	109	MC	07	1	771	0.5448							1.05
2013_IAlg	109	CR	08	4	771	0.7478	-0.4795	0.4038	-0.4193	0.4950			0.73
2013_IAlg	109	CR	09	6	771	2.0386	0.2470	-0.3001	1.1306	41.1306	-42.3750	0.1668	0.73
2013_IAlg	109	CR	10										
2013_IAlg	110	MC	01	1	791	-0.0492							0.98
2013_IAlg	110	MC	02	1	791	0.6756							1.13
2013_IAlg	110	MC	03	1	791	1.6447							1.34
2013_IAlg	110	MC	04	1	791	1.7142							1.08
2013_IAlg	110	MC	05	1	791	-0.4488							0.97
2013_IAlg	110	MC	06	1	791	0.8296							1.02
2013_IAlg	110	MC	07	1	791	0.2315							1.03
2013_IAlg	110	CR	08	2	791	-0.6036	0.2224	-0.2224					0.89
2013_IAlg	110	CR	09	6	791	1.4890	-0.6338	-0.3115	0.4270	0.1680	-0.1256	0.4759	0.64
2013_IAlg	110	CR	10	2	791	0.5984	0.2541	-0.2541					0.80
2013_IAlg	111	MC	01	1	785	0.9143							0.99
2013_IAlg	111	MC	02	1	785	0.6287							0.96
2013_IAlg	111	MC	03	1	785	-0.1308							0.96
2013_IAlg	111	MC	04	1	785	0.8753							1.09

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	111	MC	05	1	785	0.0721							1.08
2013_IAlg	111	MC	06	1	785	1.1931							1.11
2013_IAlg	111	MC	07	1	785	0.9340							1.12
2013_IAlg	111	CR	08	2	785	0.5043	-0.8934	0.8934					0.87
2013_IAlg	111	CR	09	2	785	-0.1600	0.3370	-0.3370					0.81
2013_IAlg	111	CR	10										
2013_IAlg	112	MC	01	1	780	0.6982							1.15
2013_IAlg	112	MC	02	1	780	0.0522							1.05
2013_IAlg	112	MC	03	1	780	-0.8705							0.88
2013_IAlg	112	MC	04	1	780	0.4385							1.11
2013_IAlg	112	MC	05	1	780	-0.1576							1.03
2013_IAlg	112	MC	06	1	780	0.7523							1.08
2013_IAlg	112	MC	07	1	780	0.1608							1.10
2013_IAlg	112	CR	08	4	780	1.8482	-1.2118	-0.1795	-0.5367	1.9280			0.86
2013_IAlg	112	CR	09	2	780	0.3143	0.2560	-0.2560					0.89
2013_IAlg	112	CR	10	4	780	0.8146	-0.7527	-0.2433	0.1884	0.8076			0.82
2013_IAlg	113	MC	01										
2013_IAlg	113	MC	02	1	761	0.8569							1.17
2013_IAlg	113	MC	03	1	761	0.8714							1.15
2013_IAlg	113	MC	04	1	761	1.0986							1.02
2013_IAlg	113	MC	05	1	761	1.2975							1.07
2013_IAlg	113	MC	06	1	761	0.1227							1.04
2013_IAlg	113	MC	07	1	761	0.0245							0.96
2013_IAlg	113	CR	08	2	761	0.7301	0.5135	-0.5135					0.82
2013_IAlg	113	CR	09	6	761	1.4433	-0.2043	-0.0929	0.6195	-0.3593	0.3764	-0.3394	0.68
2013_IAlg	113	CR	10	2	761	0.7913	-0.4282	0.4282					0.97
2013_IAlg	114	MC	01	1	763	-1.2004							0.93
2013_IAlg	114	MC	02	1	763	0.5674							1.02

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	114	MC	03	1	763	0.8422							1.09
2013_IAlg	114	MC	04	1	763	0.4584							1.12
2013_IAlg	114	MC	05	1	763	1.2732							0.96
2013_IAlg	114	MC	06	1	763	-0.7817							0.90
2013_IAlg	114	MC	07	1	763	-0.2406							1.16
2013_IAlg	114	CR	08	2	763	0.2787	0.7638	-0.7638					0.85
2013_IAlg	114	CR	09										
2013_IAlg	114	CR	10	4	763	1.8865	-0.3761	-2.8716	3.2477				0.95
2013_IAlg	115	MC	01	1	770	1.3293							1.03
2013_IAlg	115	MC	02	1	770	0.5916							1.11
2013_IAlg	115	MC	03	1	770	0.7898							1.00
2013_IAlg	115	MC	04	1	770	-0.8518							0.94
2013_IAlg	115	MC	05	1	770	0.3654							1.05
2013_IAlg	115	MC	06	1	770	-1.6790							1.08
2013_IAlg	115	MC	07	1	770	1.0902							0.99
2013_IAlg	115	CR	08	2	770	1.8781	0.3013	-0.3013					0.85
2013_IAlg	115	CR	09										
2013_IAlg	115	CR	10	2	770	2.0524	-0.5086	0.5086					0.93
2013_IAlg	116	MC	01	1	773	-0.0615							1.22
2013_IAlg	116	MC	02	1	773	-0.5327							0.93
2013_IAlg	116	MC	03	1	773	2.2288							1.00
2013_IAlg	116	MC	04	1	773	0.8097							0.98
2013_IAlg	116	MC	05	1	773	0.3187							1.16
2013_IAlg	116	MC	06	1	773	-0.5825							0.93
2013_IAlg	116	MC	07	1	773	0.2697							1.02
2013_IAlg	116	CR	08	2	773	1.1926	-0.5462	0.5462					0.86
2013_IAlg	116	CR	09	6	773	1.8196	-0.0687	-0.1211	-0.3383	-0.8756	-0.7097	2.1134	0.83
2013_IAlg	116	CR	10	2	773	0.9531	0.6805	-0.6805					0.94

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	117	MC	01	1	775	1.2537							1.13
2013_IAlg	117	MC	02	1	775	1.2454							1.08
2013_IAlg	117	MC	03	1	775	-1.0656							0.95
2013_IAlg	117	MC	04	1	775	-1.1284							0.93
2013_IAlg	117	MC	05	1	775	0.3119							1.10
2013_IAlg	117	MC	06	1	775	0.5530							0.96
2013_IAlg	117	MC	07	1	775	-0.4499							0.95
2013_IAlg	117	CR	08	2	775	-0.2915	0.0896	-0.0896					0.86
2013_IAlg	117	CR	09										
2013_IAlg	117	CR	10	4	775	3.5831	0.9785	0.3565	-1.3350				0.69
2013_IAlg	118	MC	01	1	783	2.0798							1.05
2013_IAlg	118	MC	02	1	783	0.3769							1.09
2013_IAlg	118	MC	03	1	783	-0.0320							1.09
2013_IAlg	118	MC	04	1	783	-0.6735							0.95
2013_IAlg	118	MC	05	1	783	-0.0137							1.00
2013_IAlg	118	MC	06	1	783	0.1889							0.96
2013_IAlg	118	MC	07	1	783	0.8453							1.26
2013_IAlg	118	CR	08	2	783	1.7035	0.2396	-0.2396					0.90
2013_IAlg	118	CR	09	2	783	1.3400	0.0632	-0.0632					0.95
2013_IAlg	118	CR	10	6	783	0.8732	1.3434	-0.6803	0.1358	0.3399	-0.2626	-0.8762	0.53
2013_IAlg	119	MC	01	1	786	0.3466							1.02
2013_IAlg	119	MC	02	1	786	1.0169							1.18
2013_IAlg	119	MC	03	1	786	0.5495							1.12
2013_IAlg	119	MC	04	1	786	-0.4518							1.04
2013_IAlg	119	MC	05	1	786	0.4725							1.15
2013_IAlg	119	MC	06	1	786	-0.4025							0.99
2013_IAlg	119	MC	07	1	786	0.1312							0.97
2013_IAlg	119	CR	08	2	786	1.9547	-0.1279	0.1279					1.06



Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	119	CR	09	6	786	0.9655	0.2294	-1.0879	0.0870	-0.5624	0.6669	0.6670	0.70
2013_IAlg	119	CR	10	2	786	0.3656	-0.0969	0.0969					0.80
2013_IAlg	120	MC	01	1	769	0.6855							1.04
2013_IAlg	120	MC	02	1	769	0.3437							1.09
2013_IAlg	120	MC	03	1	769	0.3011							0.91
2013_IAlg	120	MC	04	1	769	-0.3715							0.94
2013_IAlg	120	MC	05	1	769	-0.1221							1.01
2013_IAlg	120	MC	06	1	769	0.6790							1.17
2013_IAlg	120	MC	07	1	769	0.3193							1.05
2013_IAlg	120	CR	08	2	769	0.5165	1.9159	-1.9159					0.81
2013_IAlg	120	CR	09	4	769	1.1914	-0.0019	1.4633	0.6735	-2.1349			0.83
2013_IAlg	120	CR	10	4	769	2.8849	-0.2203	0.3658	-0.1455				1.09
2013_IAlg	121	MC	01	1	781	-2.1659							0.97
2013_IAlg	121	MC	02	1	781	-0.2801							0.99
2013_IAlg	121	MC	03	1	781	0.1432							1.01
2013_IAlg	121	MC	04	1	781	-0.2859							1.06
2013_IAlg	121	MC	05	1	781	0.8123							1.03
2013_IAlg	121	MC	06	1	781	1.6518							1.20
2013_IAlg	121	MC	07	1	781	0.2781							0.99
2013_IAlg	121	CR	08	2	781	1.5239	0.2502	-0.2502					0.91
2013_IAlg	121	CR	09										
2013_IAlg	121	CR	10	2	781	1.2261	1.6338	-1.6338					0.86
2013_IAlg	122	MC	01	1	722	1.2211							1.11
2013_IAlg	122	MC	02	1	722	0.8001							1.15
2013_IAlg	122	MC	03	1	722	-1.0218							0.96
2013_IAlg	122	MC	04	1	722	-1.0371							0.97
2013_IAlg	122	MC	05	1	722	0.8533							1.27
2013_IAlg	122	MC	06	1	722	0.1025							0.91

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	122	MC	07	1	722	-1.7746							0.90
2013_IAlg	122	CR	08	2	722	1.5032	-0.2248	0.2248					0.92
2013_IAlg	122	CR	09	4	722	-0.5785	0.1893	0.0355	0.0846	-0.3095			0.81
2013_IAlg	122	CR	10	4	722	1.3201	0.4713	-0.2062	0.5470	-0.8121			0.68
2013_IAlg	123	MC	01	1	760	0.2222							0.93
2013_IAlg	123	MC	02	1	760	-0.1577							1.14
2013_IAlg	123	MC	03	1	760	0.6527							1.14
2013_IAlg	123	MC	04	1	760	0.3082							1.11
2013_IAlg	123	MC	05	1	760	0.6726							1.19
2013_IAlg	123	MC	06	1	760	-0.6924							0.96
2013_IAlg	123	MC	07	1	760	0.2713							1.01
2013_IAlg	123	CR	08	2	760	0.6425	0.9013	-0.9013					0.81
2013_IAlg	123	CR	09	4	760	0.2666	0.4774	-1.0401	-0.0847	0.6475			0.87
2013_IAlg	123	CR	10	4	760	1.4362	0.1017	-1.5161	-0.0565	1.4708			0.77
2013_IAlg	124	MC	01	1	780	-0.4280							0.97
2013_IAlg	124	MC	02	1	780	-0.6660							0.98
2013_IAlg	124	MC	03	1	780	-0.4869							0.92
2013_IAlg	124	MC	04										
2013_IAlg	124	MC	05	1	780	-0.0991							1.07
2013_IAlg	124	MC	06	1	780	0.9779							1.26
2013_IAlg	124	MC	07	1	780	0.0101							1.05
2013_IAlg	124	CR	08	2	780	0.8544	0.2423	-0.2423					1.02
2013_IAlg	124	CR	09										
2013_IAlg	124	CR	10	4	780	0.9817	0.8189	-1.2483	0.6084	-0.1790			0.67
2013_IAlg	125	MC	01	1	773	0.4400							1.02
2013_IAlg	125	MC	02	1	773	0.2848							1.06
2013_IAlg	125	MC	03	1	773	-0.3070							1.09
2013_IAlg	125	MC	04	1	773	-0.3264							1.05

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	125	MC	05	1	773	0.5787							1.07
2013_IAlg	125	MC	06	1	773	0.0612							0.96
2013_IAlg	125	MC	07										
2013_IAlg	125	CR	08	2	773	1.3429	0.1029	-0.1029					0.86
2013_IAlg	125	CR	09	4	773	1.0663	1.8461	-1.0664	-0.9892	0.2094			0.72
2013_IAlg	125	CR	10	4	773	3.4664	0.9980	-1.8131	41.8461	-41.0310			1.03
2013_IAlg	126	MC	01	1	774	0.1136							1.01
2013_IAlg	126	MC	02	1	774	0.4490							0.94
2013_IAlg	126	MC	03	1	774	-0.9269							1.03
2013_IAlg	126	MC	04	1	774	1.9498							1.13
2013_IAlg	126	MC	05	1	774	1.2283							1.08
2013_IAlg	126	MC	06	1	774	0.1389							1.01
2013_IAlg	126	MC	07										
2013_IAlg	126	CR	08	2	774	0.7537	1.8131	-1.8131					0.91
2013_IAlg	126	CR	09	4	774	2.1272	0.5171	-0.9474	1.0068	-0.5765			0.79
2013_IAlg	126	CR	10	4	774	1.9721	0.2743	-1.4663	0.4965	0.6955			1.01
2013_IAlg	127	MC	01	1	766	0.1707							0.97
2013_IAlg	127	MC	02	1	766	-0.4239							1.04
2013_IAlg	127	MC	03	1	766	0.6648							1.24
2013_IAlg	127	MC	04	1	766	0.1248							1.03
2013_IAlg	127	MC	05	1	766	-0.2465							0.92
2013_IAlg	127	MC	06	1	766	0.9049							1.06
2013_IAlg	127	MC	07	1	766	-0.5372							0.98
2013_IAlg	127	CR	08	4	766	0.6312	-0.3327	-0.4133	0.4814	0.2646			0.89
2013_IAlg	127	CR	09	2	766	1.8514	0.1035	-0.1035					0.94
2013_IAlg	127	CR	10	4	766	1.3047	1.4818	-0.7579	-0.4163	-0.3076			0.92
2013_IAlg	128	MC	01	1	756	1.1173							0.99
2013_IAlg	128	MC	02	1	756	-0.0388							1.03

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	128	MC	03	1	756	0.1745							0.98
2013_IAlg	128	MC	04										
2013_IAlg	128	MC	05	1	756	1.1598							1.20
2013_IAlg	128	MC	06	1	756	-0.7485							1.02
2013_IAlg	128	MC	07	1	756	1.3862							1.15
2013_IAlg	128	CR	08	2	756	1.0793	-0.3268	0.3268					0.88
2013_IAlg	128	CR	09	4	756	0.7926	2.0760	-0.3818	-0.6763	-1.0179			0.62
2013_IAlg	128	CR	10										
2013_IAlg	129	MC	01	1	780	2.6621							1.13
2013_IAlg	129	MC	02	1	780	0.2736							1.04
2013_IAlg	129	MC	03	1	780	0.6569							1.06
2013_IAlg	129	MC	04	1	780	2.3351							1.11
2013_IAlg	129	MC	05	1	780	-1.8610							0.91
2013_IAlg	129	MC	06	1	780	0.0188							1.16
2013_IAlg	129	MC	07	1	780	0.2479							0.96
2013_IAlg	129	CR	08	4	780	1.2072	0.8283	-0.5053	1.2457	-1.5687			0.81
2013_IAlg	129	CR	09	2	780	1.5448	0.0902	-0.0902					0.95
2013_IAlg	129	CR	10	4	780	0.7172	0.0166	0.5885	-0.8990	0.2940			0.78
2013_IAlg	130	MC	01	1	761	1.4550							1.04
2013_IAlg	130	MC	02	1	761	1.8258							1.21
2013_IAlg	130	MC	03	1	761	-1.4264							1.00
2013_IAlg	130	MC	04	1	761	-1.2427							1.04
2013_IAlg	130	MC	05	1	761	0.5028							1.10
2013_IAlg	130	MC	06	1	761	1.8824							1.04
2013_IAlg	130	MC	07	1	761	1.4459							1.07
2013_IAlg	130	CR	08	2	761	1.3017	0.7539	-0.7539					0.85
2013_IAlg	130	CR	09	4	761	0.6070	-0.5163	0.7634	0.2141	-0.4612			0.81
2013_IAlg	130	CR	10	6	761	1.5732	1.0398	-0.4035	-0.2523	0.3110	0.1659	-0.8609	0.63

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	131	MC	01	1	754	-0.0171							1.10
2013_IAlg	131	MC	02	1	754	0.8115							0.98
2013_IAlg	131	MC	03	1	754	-1.8588							0.88
2013_IAlg	131	MC	04	1	754	-0.8651							0.98
2013_IAlg	131	MC	05	1	754	-1.0997							1.11
2013_IAlg	131	MC	06	1	754	0.8115							1.03
2013_IAlg	131	MC	07	1	754	0.9418							1.24
2013_IAlg	131	CR	08	2	754	1.0615	0.1081	-0.1081					0.95
2013_IAlg	131	CR	09	6	754	1.2381	-0.2694	-0.8500	0.2360	0.4402	-0.1216	0.5647	0.78
2013_IAlg	131	CR	10	2	754	1.0575	0.6126	-0.6126					0.92
2013_IAlg	132	MC	01										
2013_IAlg	132	MC	02	1	740	0.3011							1.09
2013_IAlg	132	MC	03	1	740	-0.5464							1.10
2013_IAlg	132	MC	04	1	740	1.3095							1.14
2013_IAlg	132	MC	05	1	740	-0.2122							1.04
2013_IAlg	132	MC	06	1	740	0.3654							1.10
2013_IAlg	132	MC	07	1	740	0.8957							1.15
2013_IAlg	132	CR	08	2	740	1.3452	1.5032	-1.5031					0.89
2013_IAlg	132	CR	09	6	740	0.5298	0.4408	-0.3629	-0.4570	-0.0701	-0.1601	0.6093	0.57
2013_IAlg	132	CR	10	2	740	0.8294	-0.1050	0.1050					0.83
2013_IAlg	133	MC	01	1	718	1.2353							1.07
2013_IAlg	133	MC	02	1	718	0.8923							1.13
2013_IAlg	133	MC	03	1	718	0.6748							1.04
2013_IAlg	133	MC	04	1	718	0.8154							1.03
2013_IAlg	133	MC	05	1	718	0.0343							0.91
2013_IAlg	133	MC	06	1	718	0.4297							0.96
2013_IAlg	133	MC	07	1	718	0.6174							1.13
2013_IAlg	133	CR	08	2	718	1.5260	0.4586	-0.4586					1.00

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	S3	S4	S5	S6	INFIT
2013_IAlg	133	CR	09	2	718	0.6048	0.8261	-0.8261					0.98
2013_IAlg	133	CR	10	6	718	0.7294	0.9188	-0.8983	0.8202	-1.3036	0.2811	0.1819	0.66
2013_IAlg	134	MC	01	1	745	0.0129							1.04
2013_IAlg	134	MC	02	1	745	3.0416							1.10
2013_IAlg	134	MC	03	1	745	-0.7041							1.01
2013_IAlg	134	MC	04										
2013_IAlg	134	MC	05	1	745	0.0129							1.09
2013_IAlg	134	MC	06	1	745	0.2792							1.11
2013_IAlg	134	MC	07	1	745	2.0337							1.04
2013_IAlg	134	CR	08	4	745	0.8951	0.7423	-1.7458	-0.3939	1.3974			0.77
2013_IAlg	134	CR	09	4	745	1.1600	0.1265	1.0505	0.4884	-1.6653			0.81
2013_IAlg	134	CR	10	2	745	2.9071	1.2836	-1.2836					0.93
2013_IAlg	135	MC	01	1	759	0.3528							1.19
2013_IAlg	135	MC	02	1	759	-0.0383							0.98
2013_IAlg	135	MC	03	1	759	-0.2624							1.06
2013_IAlg	135	MC	04	1	759	0.4307							1.02
2013_IAlg	135	MC	05	1	759	0.0552							0.94
2013_IAlg	135	MC	06	1	759	0.3786							0.94
2013_IAlg	135	MC	07	1	759	0.2631							1.14
2013_IAlg	135	CR	08	4	759	2.7790	0.6850	-0.7404	0.1128	-0.0573			0.93
2013_IAlg	135	CR	09	4	759	0.4371	-0.4276	0.5703	0.6111	-0.7538			0.72
2013_IAlg	135	CR	10	2	759	2.4714	-2.0622	2.0622					1.00

## Appendix E: DIF Statistics

The first four columns from the left contain the test name, form ID, item type, and item sequence number within the form. The next three columns contain the Mantel Haenszel DIF statistical values (note that the MH Delta statistic cannot be calculated for CR items). The final two columns will only have values if the item displays possible moderate or severe DIF; if so, the degree of DIF (B/BB = moderate; C/CC = severe) and the favored group will be shown. Items without statistics are DNS (Do Not Score) status items.

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	101	MC	01	-0.29	0.55	-0.04		
2013_IAlg	101	MC	02	0.05	0.02	0.01		
2013_IAlg	101	MC	03	0.21	0.21	0.05		
2013_IAlg	101	MC	04	0.28	0.54	0.07		
2013_IAlg	101	MC	05	-0.74	2.84	-0.12		
2013_IAlg	101	MC	06	-0.58	2.31	-0.10		
2013_IAlg	101	MC	07	-0.65	2.62	-0.10		
2013_IAlg	101	CR	08		8.52	0.21	BB	Female
2013_IAlg	101	CR	09		0.00	0.00		
2013_IAlg	101	CR	10		0.11	0.04		
2013_IAlg	102	MC	01	0.08	0.05	0.01		
2013_IAlg	102	MC	02	0.74	2.92	0.11		
2013_IAlg	102	MC	03	0.25	0.43	0.05		
2013_IAlg	102	MC	04	0.01	0.00	0.00		
2013_IAlg	102	MC	05	-0.94	5.51	-0.17		
2013_IAlg	102	MC	06	-0.06	0.03	-0.01		
2013_IAlg	102	MC	07	0.66	3.00	0.12		
2013_IAlg	102	MC	08	-0.32	0.70	-0.05		
2013_IAlg	102	CR	09		0.35	-0.03		
2013_IAlg	102	CR	10					
2013_IAlg	103	MC	01	-0.61	1.62	-0.09		
2013_IAlg	103	MC	02	-0.39	0.75	-0.04		
2013_IAlg	103	MC	03	0.17	0.21	0.05		
2013_IAlg	103	MC	04	-0.18	0.26	-0.03		
2013_IAlg	103	MC	05	-0.05	0.02	0.00		
2013_IAlg	103	MC	06	0.32	0.60	0.06		
2013_IAlg	103	MC	07	-0.20	0.26	-0.03		
2013_IAlg	103	CR	08		2.79	0.13		
2013_IAlg	103	CR	09		2.62	0.14		
2013_IAlg	103	CR	10		0.55	-0.03		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	104	MC	01					
2013_IAlg	104	MC	02	0.23	0.38	0.07		
2013_IAlg	104	MC	03	0.19	0.18	0.06		
2013_IAlg	104	MC	04	0.17	0.12	0.04		
2013_IAlg	104	MC	05	0.13	0.11	0.04		
2013_IAlg	104	MC	06	-1.57	14.87	-0.24	C	Male
2013_IAlg	104	MC	07	-0.01	0.00	0.01		
2013_IAlg	104	CR	08		0.52	0.07		
2013_IAlg	104	CR	09		0.10	0.04		
2013_IAlg	104	CR	10					
2013_IAlg	105	MC	01	0.93	5.98	0.18		
2013_IAlg	105	MC	02	0.88	3.97	0.16		
2013_IAlg	105	MC	03	0.16	0.18	0.04		
2013_IAlg	105	MC	04					
2013_IAlg	105	MC	05	-0.89	5.78	-0.18		
2013_IAlg	105	MC	06	0.41	1.19	0.09		
2013_IAlg	105	MC	07	-0.04	0.01	0.00		
2013_IAlg	105	CR	08		0.06	0.00		
2013_IAlg	105	CR	09		0.20	0.04		
2013_IAlg	105	CR	10		13.62	-0.16		
2013_IAlg	106	MC	01	1.35	4.33	0.13	B	Female
2013_IAlg	106	MC	02	0.25	0.40	0.05		
2013_IAlg	106	MC	03	-0.39	1.05	-0.09		
2013_IAlg	106	MC	04	-0.84	5.10	-0.14		
2013_IAlg	106	MC	05	0.06	0.02	0.02		
2013_IAlg	106	MC	06	0.17	0.14	0.04		
2013_IAlg	106	MC	07	0.84	4.72	0.15		
2013_IAlg	106	CR	08		0.21	-0.02		
2013_IAlg	106	CR	09		0.00	-0.01		
2013_IAlg	106	CR	10		0.31	-0.04		
2013_IAlg	107	MC	01	0.12	0.10	0.02		
2013_IAlg	107	MC	02	-0.19	0.13	-0.02		
2013_IAlg	107	MC	03	-0.69	2.95	-0.11		
2013_IAlg	107	MC	04	-0.72	3.05	-0.11		
2013_IAlg	107	MC	05	-0.21	0.29	-0.03		
2013_IAlg	107	MC	06	0.67	3.23	0.12		
2013_IAlg	107	MC	07	0.14	0.15	0.02		
2013_IAlg	107	CR	08		1.31	-0.08		
2013_IAlg	107	CR	09					



Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	107	CR	10		2.58	0.07		
2013_IAlg	108	MC	01	-1.30	5.68	-0.15	B	Male
2013_IAlg	108	MC	02	-0.48	1.66	-0.08		
2013_IAlg	108	MC	03	0.01	0.00	0.00		
2013_IAlg	108	MC	04	0.34	0.69	0.06		
2013_IAlg	108	MC	05	-0.25	0.46	-0.07		
2013_IAlg	108	MC	06	0.90	3.77	0.12		
2013_IAlg	108	MC	07	0.46	1.00	0.06		
2013_IAlg	108	CR	08		0.30	0.02		
2013_IAlg	108	CR	09		6.88	-0.15		
2013_IAlg	108	CR	10		3.57	0.09		
2013_IAlg	109	MC	01	-1.22	9.26	-0.22	B	Male
2013_IAlg	109	MC	02	0.00	0.00	0.00		
2013_IAlg	109	MC	03	0.42	0.97	0.08		
2013_IAlg	109	MC	04	0.08	0.04	0.01		
2013_IAlg	109	MC	05	1.24	4.52	0.14	B	Female
2013_IAlg	109	MC	06	0.34	0.67	0.05		
2013_IAlg	109	MC	07	-1.08	7.45	-0.18	B	Male
2013_IAlg	109	CR	08		0.54	0.03		
2013_IAlg	109	CR	09		1.29	0.05		
2013_IAlg	109	CR	10					
2013_IAlg	110	MC	01	0.19	0.24	0.03		
2013_IAlg	110	MC	02	-0.56	2.09	-0.11		
2013_IAlg	110	MC	03	-0.35	0.61	-0.05		
2013_IAlg	110	MC	04	0.09	0.03	0.01		
2013_IAlg	110	MC	05	0.57	2.16	0.10		
2013_IAlg	110	MC	06	-0.72	3.09	-0.12		
2013_IAlg	110	MC	07	0.25	0.41	0.02		
2013_IAlg	110	CR	08		15.12	-0.20	BB	Male
2013_IAlg	110	CR	09		9.10	0.12		
2013_IAlg	110	CR	10		2.77	0.10		
2013_IAlg	111	MC	01	-0.13	0.09	0.01		
2013_IAlg	111	MC	02	-0.25	0.40	-0.02		
2013_IAlg	111	MC	03	-0.81	4.59	-0.11		
2013_IAlg	111	MC	04	-0.44	1.26	-0.06		
2013_IAlg	111	MC	05	-0.36	1.03	-0.06		
2013_IAlg	111	MC	06	-0.80	3.66	-0.12		
2013_IAlg	111	MC	07	-0.18	0.22	-0.02		
2013_IAlg	111	CR	08		1.30	0.10		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	111	CR	09		16.86	0.25	BB	Female
2013_IAlg	111	CR	10					
2013_IAlg	112	MC	01	0.47	1.52	0.09		
2013_IAlg	112	MC	02	-0.21	0.33	-0.04		
2013_IAlg	112	MC	03	-0.81	3.57	-0.11		
2013_IAlg	112	MC	04	0.22	0.36	0.05		
2013_IAlg	112	MC	05	-0.36	0.94	-0.07		
2013_IAlg	112	MC	06	-0.53	1.77	-0.10		
2013_IAlg	112	MC	07	-0.12	0.12	-0.01		
2013_IAlg	112	CR	08		0.01	-0.01		
2013_IAlg	112	CR	09		17.43	0.23	BB	Female
2013_IAlg	112	CR	10		3.20	-0.08		
2013_IAlg	113	MC	01					
2013_IAlg	113	MC	02	0.62	2.42	0.12		
2013_IAlg	113	MC	03	-0.45	1.27	-0.08		
2013_IAlg	113	MC	04	-0.42	0.95	-0.04		
2013_IAlg	113	MC	05	0.08	0.03	0.02		
2013_IAlg	113	MC	06	0.46	1.49	0.10		
2013_IAlg	113	MC	07	0.50	1.60	0.09		
2013_IAlg	113	CR	08		2.66	-0.07		
2013_IAlg	113	CR	09		0.08	0.04		
2013_IAlg	113	CR	10		0.03	-0.01		
2013_IAlg	114	MC	01	-0.33	0.57	-0.04		
2013_IAlg	114	MC	02	-0.65	2.75	-0.11		
2013_IAlg	114	MC	03	-1.47	13.05	-0.26	B	Male
2013_IAlg	114	MC	04	0.41	1.23	0.08		
2013_IAlg	114	MC	05	0.44	0.92	0.08		
2013_IAlg	114	MC	06	1.15	7.36	0.16	B	Female
2013_IAlg	114	MC	07	-0.55	2.36	-0.12		
2013_IAlg	114	CR	08		0.19	-0.03		
2013_IAlg	114	CR	09					
2013_IAlg	114	CR	10		5.37	0.13		
2013_IAlg	115	MC	01	-0.80	3.21	-0.12		
2013_IAlg	115	MC	02	-0.37	0.99	-0.08		
2013_IAlg	115	MC	03	-0.11	0.07	-0.02		
2013_IAlg	115	MC	04	-0.95	5.45	-0.15		
2013_IAlg	115	MC	05	0.68	3.25	0.12		
2013_IAlg	115	MC	06	1.13	5.85	0.15	B	Female
2013_IAlg	115	MC	07	-0.73	2.71	-0.10		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	115	CR	08		6.83	0.16		
2013_IAlg	115	CR	09					
2013_IAlg	115	CR	10		4.44	0.14		
2013_IAlg	116	MC	01	0.49	1.91	0.09		
2013_IAlg	116	MC	02	0.72	3.11	0.13		
2013_IAlg	116	MC	03	-0.15	0.05	0.01		
2013_IAlg	116	MC	04	-0.26	0.40	-0.03		
2013_IAlg	116	MC	05	0.15	0.17	0.07		
2013_IAlg	116	MC	06	0.71	3.18	0.13		
2013_IAlg	116	MC	07	-1.04	7.51	-0.17	B	Male
2013_IAlg	116	CR	08		1.33	0.08		
2013_IAlg	116	CR	09		0.53	0.02		
2013_IAlg	116	CR	10		2.27	-0.07		
2013_IAlg	117	MC	01	0.24	0.29	0.03		
2013_IAlg	117	MC	02	-0.29	0.42	-0.04		
2013_IAlg	117	MC	03	-0.48	1.23	-0.06		
2013_IAlg	117	MC	04	-0.79	3.21	-0.12		
2013_IAlg	117	MC	05	-0.80	4.32	-0.14		
2013_IAlg	117	MC	06	-1.18	7.77	-0.17	B	Male
2013_IAlg	117	MC	07	1.61	15.94	0.25	C	Female
2013_IAlg	117	CR	08		5.77	0.12		
2013_IAlg	117	CR	09					
2013_IAlg	117	CR	10		0.37	0.02		
2013_IAlg	118	MC	01	0.39	0.48	0.07		
2013_IAlg	118	MC	02	0.08	0.05	0.02		
2013_IAlg	118	MC	03	-0.32	0.76	-0.06		
2013_IAlg	118	MC	04	-0.48	1.41	-0.07		
2013_IAlg	118	MC	05	-1.00	6.75	-0.15	B	Male
2013_IAlg	118	MC	06	0.62	2.48	0.12		
2013_IAlg	118	MC	07	0.78	4.20	0.14		
2013_IAlg	118	CR	08		1.40	-0.06		
2013_IAlg	118	CR	09		0.57	0.04		
2013_IAlg	118	CR	10		0.13	0.02		
2013_IAlg	119	MC	01	0.73	3.63	0.11		
2013_IAlg	119	MC	02	-0.39	0.99	-0.09		
2013_IAlg	119	MC	03	-0.85	5.10	-0.17		
2013_IAlg	119	MC	04	-0.11	0.09	-0.02		
2013_IAlg	119	MC	05	-0.18	0.25	-0.04		
2013_IAlg	119	MC	06	-0.33	0.73	-0.05		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	119	MC	07	0.33	0.73	0.05		
2013_IAlg	119	CR	08		1.02	-0.05		
2013_IAlg	119	CR	09		0.90	0.05		
2013_IAlg	119	CR	10		0.81	0.05		
2013_IAlg	120	MC	01	-0.67	2.87	-0.11		
2013_IAlg	120	MC	02	-0.57	2.27	-0.09		
2013_IAlg	120	MC	03	-0.06	0.02	0.01		
2013_IAlg	120	MC	04	-0.61	2.29	-0.09		
2013_IAlg	120	MC	05	0.19	0.25	0.03		
2013_IAlg	120	MC	06	0.29	0.60	0.07		
2013_IAlg	120	MC	07	-0.08	0.04	0.00		
2013_IAlg	120	CR	08		6.14	0.14		
2013_IAlg	120	CR	09		0.14	0.00		
2013_IAlg	120	CR	10		1.17	0.10		
2013_IAlg	121	MC	01	1.58	7.47	0.17		
2013_IAlg	121	MC	02	0.15	0.16	0.03		
2013_IAlg	121	MC	03	-0.60	2.46	-0.09		
2013_IAlg	121	MC	04	0.04	0.01	0.01		
2013_IAlg	121	MC	05	-1.28	9.55	-0.21	B	Male
2013_IAlg	121	MC	06	-0.60	1.58	-0.09		
2013_IAlg	121	MC	07	0.88	5.07	0.14		
2013_IAlg	121	CR	08		0.70	0.05		
2013_IAlg	121	CR	09					
2013_IAlg	121	CR	10		0.00	0.00		
2013_IAlg	122	MC	01	-0.89	3.79	-0.09		
2013_IAlg	122	MC	02	-0.30	0.54	-0.02		
2013_IAlg	122	MC	03	0.41	0.85	0.10		
2013_IAlg	122	MC	04	-1.26	8.12	-0.14	B	Male
2013_IAlg	122	MC	05	-0.02	0.00	0.05		
2013_IAlg	122	MC	06	0.16	0.14	0.05		
2013_IAlg	122	MC	07	0.02	0.00	0.06		
2013_IAlg	122	CR	08		2.60	0.17		
2013_IAlg	122	CR	09		1.07	0.11		
2013_IAlg	122	CR	10		0.00	0.11		
2013_IAlg	123	MC	01	0.12	0.10	0.02		
2013_IAlg	123	MC	02	-0.18	0.25	-0.05		
2013_IAlg	123	MC	03	-0.29	0.58	-0.05		
2013_IAlg	123	MC	04	0.27	0.54	0.04		
2013_IAlg	123	MC	05	0.21	0.30	0.04		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	123	MC	06	-0.80	3.95	-0.14		
2013_IAlg	123	MC	07	0.09	0.06	0.01		
2013_IAlg	123	CR	08		0.16	0.02		
2013_IAlg	123	CR	09		0.01	0.00		
2013_IAlg	123	CR	10		0.41	0.04		
2013_IAlg	124	MC	01	-0.35	0.74	-0.06		
2013_IAlg	124	MC	02	0.63	2.39	0.10		
2013_IAlg	124	MC	03	-0.37	0.81	-0.06		
2013_IAlg	124	MC	04					
2013_IAlg	124	MC	05	0.56	2.18	0.11		
2013_IAlg	124	MC	06	0.29	0.53	0.07		
2013_IAlg	124	MC	07	0.01	0.00	0.01		
2013_IAlg	124	CR	08		9.38	0.17	BB	Female
2013_IAlg	124	CR	09					
2013_IAlg	124	CR	10		14.50	-0.15		
2013_IAlg	125	MC	01	0.62	2.41	0.10		
2013_IAlg	125	MC	02	-0.35	0.82	-0.06		
2013_IAlg	125	MC	03	0.12	0.09	0.03		
2013_IAlg	125	MC	04	0.37	0.89	0.08		
2013_IAlg	125	MC	05	-0.89	4.95	-0.14		
2013_IAlg	125	MC	06	-0.52	1.72	-0.09		
2013_IAlg	125	MC	07					
2013_IAlg	125	CR	08		1.04	-0.05		
2013_IAlg	125	CR	09		0.47	0.04		
2013_IAlg	125	CR	10		0.12	0.03		
2013_IAlg	126	MC	01	-0.70	3.19	-0.12		
2013_IAlg	126	MC	02	-0.05	0.01	-0.01		
2013_IAlg	126	MC	03	0.29	0.56	0.07		
2013_IAlg	126	MC	04	-0.20	0.14	-0.02		
2013_IAlg	126	MC	05	-0.49	1.31	-0.09		
2013_IAlg	126	MC	06	0.16	0.17	0.04		
2013_IAlg	126	MC	07					
2013_IAlg	126	CR	08		0.22	0.02		
2013_IAlg	126	CR	09		1.06	-0.06		
2013_IAlg	126	CR	10		0.60	0.07		
2013_IAlg	127	MC	01	0.47	1.34	0.08		
2013_IAlg	127	MC	02	-0.68	2.88	-0.09		
2013_IAlg	127	MC	03	-0.80	4.38	-0.16		
2013_IAlg	127	MC	04	-0.07	0.03	0.00		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	127	MC	05	0.02	0.00	0.01		
2013_IAlg	127	MC	06	0.69	2.73	0.14		
2013_IAlg	127	MC	07	-0.41	1.00	-0.06		
2013_IAlg	127	CR	08		0.01	0.02		
2013_IAlg	127	CR	09		1.09	-0.06		
2013_IAlg	127	CR	10		3.13	0.10		
2013_IAlg	128	MC	01	-0.87	3.68	-0.13		
2013_IAlg	128	MC	02	-0.86	4.95	-0.16		
2013_IAlg	128	MC	03	0.08	0.04	0.02		
2013_IAlg	128	MC	04					
2013_IAlg	128	MC	05	0.27	0.38	0.06		
2013_IAlg	128	MC	06	0.59	2.09	0.09		
2013_IAlg	128	MC	07	-1.32	8.08	-0.21	B	Male
2013_IAlg	128	CR	08		0.07	0.00		
2013_IAlg	128	CR	09		6.15	0.13		
2013_IAlg	128	CR	10					
2013_IAlg	129	MC	01	0.10	0.02	0.02		
2013_IAlg	129	MC	02	0.46	1.43	0.06		
2013_IAlg	129	MC	03	0.78	3.75	0.13		
2013_IAlg	129	MC	04	-0.38	0.41	-0.04		
2013_IAlg	129	MC	05	0.19	0.13	0.02		
2013_IAlg	129	MC	06	-0.16	0.19	-0.01		
2013_IAlg	129	MC	07	-0.61	2.21	-0.11		
2013_IAlg	129	CR	08		0.28	0.04		
2013_IAlg	129	CR	09		0.53	0.04		
2013_IAlg	129	CR	10		2.19	-0.07		
2013_IAlg	130	MC	01	-0.91	3.43	-0.03		
2013_IAlg	130	MC	02	-0.08	0.03	-0.01		
2013_IAlg	130	MC	03	0.79	3.15	0.12		
2013_IAlg	130	MC	04	-0.29	0.46	-0.03		
2013_IAlg	130	MC	05	-0.16	0.16	-0.03		
2013_IAlg	130	MC	06	0.30	0.32	0.03		
2013_IAlg	130	MC	07	-0.84	3.16	-0.04		
2013_IAlg	130	CR	08		2.07	0.15		
2013_IAlg	130	CR	09		0.06	-0.02		
2013_IAlg	130	CR	10		0.78	0.05		
2013_IAlg	131	MC	01	-0.11	0.09	-0.01		
2013_IAlg	131	MC	02	-0.40	0.89	-0.05		
2013_IAlg	131	MC	03	1.04	3.62	0.13		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	131	MC	04	0.68	2.81	0.12		
2013_IAlg	131	MC	05	-0.06	0.02	0.00		
2013_IAlg	131	MC	06	-0.21	0.26	-0.02		
2013_IAlg	131	MC	07	-0.76	3.81	-0.14		
2013_IAlg	131	CR	08		16.20	0.28	CC	Female
2013_IAlg	131	CR	09		6.71	-0.09		
2013_IAlg	131	CR	10		0.18	0.04		
2013_IAlg	132	MC	01					
2013_IAlg	132	MC	02	1.17	8.94	0.22	B	Female
2013_IAlg	132	MC	03	-0.11	0.09	-0.02		
2013_IAlg	132	MC	04	-0.67	2.26	-0.11		
2013_IAlg	132	MC	05	0.07	0.04	0.03		
2013_IAlg	132	MC	06	-0.23	0.34	-0.05		
2013_IAlg	132	MC	07	-0.16	0.15	-0.05		
2013_IAlg	132	CR	08		0.01	-0.02		
2013_IAlg	132	CR	09		0.00	0.00		
2013_IAlg	132	CR	10		0.26	-0.01		
2013_IAlg	133	MC	01	-0.45	1.03	-0.07		
2013_IAlg	133	MC	02	-0.26	0.38	-0.03		
2013_IAlg	133	MC	03	-0.61	2.20	-0.12		
2013_IAlg	133	MC	04	-0.29	0.48	-0.06		
2013_IAlg	133	MC	05	0.58	1.89	0.08		
2013_IAlg	133	MC	06	-0.30	0.52	-0.04		
2013_IAlg	133	MC	07	-1.34	11.33	-0.24	B	Male
2013_IAlg	133	CR	08		5.99	-0.16		
2013_IAlg	133	CR	09		11.92	0.21	BB	Female
2013_IAlg	133	CR	10		2.75	0.07		
2013_IAlg	134	MC	01	-0.09	0.06	-0.02		
2013_IAlg	134	MC	02	0.26	0.09	0.03		
2013_IAlg	134	MC	03	-1.55	14.44	-0.24	C	Male
2013_IAlg	134	MC	04					
2013_IAlg	134	MC	05	0.35	0.82	0.06		
2013_IAlg	134	MC	06	-0.29	0.61	-0.05		
2013_IAlg	134	MC	07	-0.33	0.34	-0.06		
2013_IAlg	134	CR	08		0.42	0.02		
2013_IAlg	134	CR	09		2.64	0.09		
2013_IAlg	134	CR	10		1.43	0.06		
2013_IAlg	135	MC	01	0.08	0.05	0.02		
2013_IAlg	135	MC	02	-0.22	0.30	-0.03		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2013_IAlg	135	MC	03	-1.15	9.25	-0.20	B	Male
2013_IAlg	135	MC	04	-0.19	0.24	-0.03		
2013_IAlg	135	MC	05	0.57	2.04	0.10		
2013_IAlg	135	MC	06	0.29	0.48	0.04		
2013_IAlg	135	MC	07	-0.61	2.60	-0.12		
2013_IAlg	135	CR	08		0.33	0.00		
2013_IAlg	135	CR	09		2.47	0.07		
2013_IAlg	135	CR	10		0.06	0.01		

DIF category meanings: A/AA = negligible, B/BB = moderate, C/CC = severe.