EXAM REPORTING

COURSE# - PROFNAME

Apr 19, 2017

UNIVERSITY OF MINNESOTA

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Letter from Director

OMS offers a variety of course scoring and reporting options that provide U of M faculty with flexible and speedy methods for scoring and reporting of midterm, final and other exams regardless of class size. We pride ourselves on prompt turn-around and accurate results and are dedicated to providing you with useful data that will help drive your decisions and get you what you need out of measurement.

In order to provide you with reports that more comprehensively assist with your test data analysis, we have developed a number of report package options that reflect those needs and what we, as assessment specialists, recommend as essential reports.

Packages include lists of student scores, statistical summaries of the results (frequency distributions, means, standard deviations), converted scores (percentiles, standard scores) and item analyses. We have worked to provide these reports to faculty in the most clear and effective way possible, by including result descriptions in the reports themselves.

OMS also provides Student Rating of Teaching support to the University. Department chairs and committees use course evaluations during annual faculty reviews to make decisions on salary increases, promotions and tenure. The information obtained from Student Ratings of Teaching is also used by instructors to help explain how different groups respond to his/her teaching style.

In addition to providing classroom resources such as the Course Exam reporting and Student Rating of Teaching reporting, OMS also offers a variety of assessment solutions employing a variety of tools, which can serve as a vital resource for data collection efforts and data utilization. Listed below are a few of our valued solutions:

- Training Grant Evaluation
- Customized Student Rating of Teaching forms
- Assessment of Learning Outcomes
- Program Evaluation

Please visit our site for more information and a complete list of solutions: http://oms.umn.edu

We look forward to providing you with the assessment solutions you need.

Sincerely,

Thomas Dohm Ph.D.

Results

Raw Score Class List (By Names)

All (With Names) (Sorted by name)

Name	Student ID	Score
30107, 30107	30107	132
30108, 30108	30108	132
30109, 30109	30109	144
30110, 30110	30110	136
30111, 30111	30111	124
30112, 30112	30112	152
30113, 30113	30113	124
30114, 30114	30114	92
30115, 30115	30115	120
30116, 30116	30116	136
30117, 30117	30117	144
30118, 30118	30118	140
30119, 30119	30119	120
30120, 30120	30120	92
30121, 30121	30121	128
30122, 30122	30122	112
30123, 30123	30123	112
30124, 30124	30124	124
30125, 30125	30125	96
30126, 30126	30126	112
30127, 30127	30127	128
30128, 30128	30128	68
30129, 30129	30129	96
30130, 30130	30130	140
30131, 30131	30131	68
30132, 30132	30132	104
30133, 30133	30133	100
30134, 30134	30134	112
30135, 30135	30135	88
30136, 30136	30136	108
30137, 30137	30137	132

Name	Student ID	Score
30138, 30138	30138	156
30139, 30139	30139	84
30140, 30140	30140	144
30141, 30141	30141	140
30142, 30142	30142	96
30143, 30143	30143	140
30144, 30144	30144	72
30145, 30145	30145	84
30146, 30146	30146	120
30147, 30147	30147	140
30148, 30148	30148	112
30149, 30149	30149	112
30150, 30150	30150	104
30151, 30151	30151	148
30152, 30152	30152	96
30153, 30153	30153	100
30154, 30154	30154	116
30155, 30155	30155	136
30156, 30156	30156	96
30157, 30157	30157	80
30158, 30158	30158	100
30159, 30159	30159	76
30160, 30160	30160	120
30161, 30161	30161	100
30162, 30162	30162	116
30163, 30163	30163	120
30164, 30164	30164	88
30165, 30165	30165	104
30166, 30166	30166	152
30167, 30167	30167	108
30168, 30168	30168	136
30169, 30169	30169	132
30170, 30170	30170	148
30171, 30171	30171	152
30172, 30172	30172	116
30173, 30173	30173	128

Name	Student ID	Score
30174, 30174	30174	100
30175, 30175	30175	36
30176, 30176	30176	104
30177, 30177	30177	120
30178, 30178	30178	112
30179, 30179	30179	76
30180, 30180	30180	72
30181, 30181	30181	60
30182, 30182	30182	132
30183, 30183	30183	104
30184, 30184	30184	112
30185, 30185	30185	64
30186, 30186	30186	96
30187, 30187	30187	124
30188, 30188	30188	44
30189, 30189	30189	84
30190, 30190	30190	112
30191, 30191	30191	100
30192, 30192	30192	56
30193, 30193	30193	128
30194, 30194	30194	112
30195, 30195	30195	100
30196, 30196	30196	132
30197, 30197	30197	88
30198, 30198	30198	92

Raw Score Class List (By Id Number)

All (No Names) (Sorted by ID)

Student ID	Score
30107	132
30108	132
30109	144
30110	136
30111	124
30112	152
30113	124
30114	92
30115	120
30116	136
30117	144
30118	140
30119	120
30120	92
30121	128
30122	112
30123	112
30124	124
30125	96
30126	112
30127	128
30128	68
30129	96
30130	140
30131	68
30132	104
30133	100
30134	112
30135	88
30136	108
30137	132
30138	156
30139	84

Student ID	Score
30140	144
30141	140
30142	96
30143	140
30144	72
30145	84
30146	120
30147	140
30148	112
30149	112
30150	104
30151	148
30152	96
30153	100
30154	116
30155	136
30156	96
30157	80
30158	100
30159	76
30160	120
30161	100
30162	116
30163	120
30164	88
30165	104
30166	152
30167	108
30168	136
30169	132
30170	148
30171	152
30172	116
30173	128
30174	100
30175	36

Student ID	Score
30176	104
30177	120
30178	112
30179	76
30180	72
30181	60
30182	132
30183	104
30184	112
30185	64
30186	96
30187	124
30188	44
30189	84
30190	112
30191	100
30192	56
30193	128
30194	112
30195	100
30196	132
30197	88
30198	92

Descriptive Statistics

Overall Descriptive Statistics Summary

Group Size	92
Mean	110.30
Standard Deviation	25.58
Variance	654.34
Highest Possible Score	160
Highest Obtained Score	156
Lowest Obtained Score	36
Range of Scores	121
90th Percentile Score	140.46
75th Percentile Score	131.67
50th Percentile Score - Median	112.00
25th Percentile Score	95.83
10th Percentile Score	75.60

Overall Total Score Distribution Table

Raw Score	Frequency	Cumulative Frequency	Percent	Cumulative Percent	Percentile Rank	Standard Score
156	1	92	1.1%	100.0%	99	68
152	3	91	3.3%	98.9%	98	66
148	2	88	2.2%	95.7%	95	65
144	3	86	3.3%	93.5%	92	63
140	5	83	5.4%	90.2%	88	62
136	4	78	4.3%	84.8%	83	60
132	6	74	6.5%	80.4%	78	58
128	4	68	4.3%	73.9%	72	57
124	4	64	4.3%	69.6%	68	55
120	6	60	6.5%	65.2%	62	54
116	3	54	3.3%	58.7%	58	52
112 MODE	10	51	10.9%	55.4%	50	51
108	2	41	2.2%	44.6%	44	49
104	5	39	5.4%	42.4%	40	48
100	7	34	7.6%	37.0%	34	46
96	6	27	6.5%	29.3%	27	44
92	3	21	3.3%	22.8%	22	43
88	3	18	3.3%	19.6%	18	41
84	3	15	3.3%	16.3%	15	40

Raw Score	Frequency	Cumulative Frequency	Percent	Cumulative Percent	Percentile Rank	Standard Score
80	1	12	1.1%	13.0%	13	38
76	2	11	2.2%	12.0%	11	37
72	2	9	2.2%	9.8%	9	35
68	2	7	2.2%	7.6%	7	33
64	1	5	1.1%	5.4%	5	32
60	1	4	1.1%	4.3%	4	30
56	1	3	1.1%	3.3%	3	29
44	1	2	1.1%	2.2%	2	24
36	1	1	1.1%	1.1%	1	21

Student Test Score Distribution
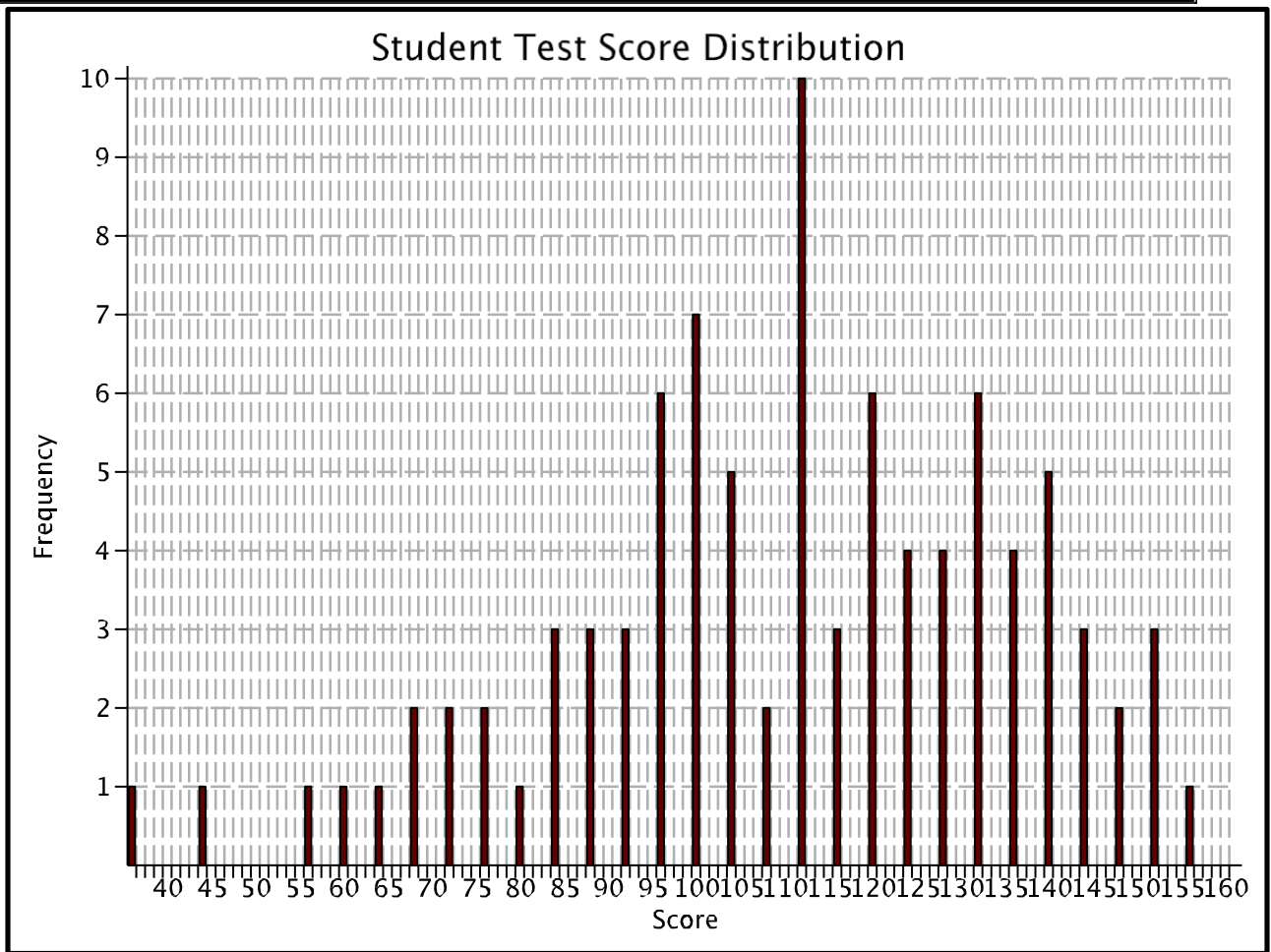
NOTES: Descriptive Statistics

Above is a table that represents the distribution of scores in several different ways:

Raw Score is the number of items answered correctly.

Mode is the most frequently appearing score (this is identified in the Raw Score column).

Percentile Rank is the percent of students who scored below the mid-point of a given score.

Frequency is the number of students with a given score.

Cumulative Percent is the percent of students at or below each score

Standard Score is computed by subtracting the population mean of the individual raw score and dividing the remainder by the standard deviation. The resulting scores have a mean of 50 and a standard deviation of 10. This is also referred to as a z-score.

Item Analysis Report

Item Analysis Report: Group

Group Size	92
Number of Items	40
Mean	110.30
Standard Deviation	25.58
Kuder-Richardson Formula 20 Reliability Coefficient *	1.01

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
1	2	78	0.52	117.3	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 2 (2.2%) 72 (78.3%) 3 (3.3%) 15 (16.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
2	2	41	0.25	117.8	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 2 (2.2%) 38 (41.3%) 30 (32.6%) 20 (21.7%) 2 (2.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
3	2	90	0.45	114.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 3 (3.3%) 83 (90.2%) 2 (2.2%) 0 (0.0%) 4 (4.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
4	4	86	0.43	114.8	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 7 (7.6%) 3 (3.3%) 1 (1.1%) 79 (85.9%) 2 (2.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
5	4	88	0.43	114.3	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 1 (1.1%) 0 (0.0%) 9 (9.8%) 81 (88.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 1 (1.1%)
6	3	84	0.42	115.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 8 (8.7%) 0 (0.0%) 77 (83.7%) 5 (5.4%) 1 (1.1%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 1 (1.1%)
7	1	58	0.20	114.7	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 53 (57.6%) 1 (1.1%) 7 (7.6%) 1 (1.1%) 30 (32.6%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
8	1	58	0.53	121.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 53 (57.6%) 23 (25.0%) 9 (9.8%) 4 (4.3%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
9	4	74	0.56	118.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 14 (15.2%) 3 (3.3%) 1 (1.1%) 68 (73.9%) 6 (6.5%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
10	5	49	0.45	122.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 1 (1.1%) 35 (38.0%) 5 (5.4%) 6 (6.5%) 45 (48.9%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
11	2	84	0.51	116.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 5 (5.4%) 77 (83.7%) 3 (3.3%) 3 (3.3%) 4 (4.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
12	4	76	0.42	116.3	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 4 (4.3%) 2 (2.2%) 6 (6.5%) 70 (76.1%) 10 (10.9%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
13	5	77	0.34	115.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 6 (6.5%) 6 (6.5%) 3 (3.3%) 6 (6.5%) 71 (77.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
14	4	53	0.50	122.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 13 (14.1%) 3 (3.3%) 10 (10.9%) 49 (53.3%) 17 (18.5%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
15	2	53	0.46	121.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 1 (1.1%) 49 (53.3%) 32 (34.8%) 3 (3.3%) 7 (7.6%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
16	2	85	0.38	114.5	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 4 (4.3%) 78 (84.8%) 4 (4.3%) 4 (4.3%) 2 (2.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
17	2	91	0.32	112.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 5 (5.4%) 84 (91.3%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
18	3	85	0.53	116.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 2 (2.2%) 0 (0.0%) 78 (84.8%) 9 (9.8%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
19	3	90	0.25	112.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 3 (3.3%) 2 (2.2%) 83 (90.2%) 3 (3.3%) 1 (1.1%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
20	4	76	0.21	113.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 0 (0.0%) 14 (15.2%) 4 (4.3%) 70 (76.1%) 4 (4.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
21	4	85	0.26	113.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 3 (3.3%) 11 (12.0%) 0 (0.0%) 78 (84.8%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
22	4	82	0.45	115.8	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 2 (2.2%) 3 (3.3%) 7 (7.6%) 75 (81.5%) 5 (5.4%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
23	4	62	0.53	121.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 26 (28.3%) 3 (3.3%) 0 (0.0%) 57 (62.0%) 6 (6.5%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
24	4	70	0.58	120.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 5 (5.4%) 11 (12.0%) 6 (6.5%) 64 (69.6%) 5 (5.4%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 1 (1.1%)
25	5	77	0.51	117.5	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 13 (14.1%) 4 (4.3%) 1 (1.1%) 3 (3.3%) 71 (77.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
26	2	52	0.48	122.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 25 (27.2%) 48 (52.2%) 8 (8.7%) 11 (12.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
27	2	84	0.30	113.7	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 9 (9.8%) 77 (83.7%) 2 (2.2%) 1 (1.1%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
28	2	79	0.35	114.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 1 (1.1%) 73 (79.3%) 8 (8.7%) 7 (7.6%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
29	1	65	0.19	113.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 60 (65.2%) 2 (2.2%) 17 (18.5%) 13 (14.1%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
30	1	63	0.41	118.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 58 (63.0%) 16 (17.4%) 14 (15.2%) 1 (1.1%) 3 (3.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
31	1	84	0.32	113.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 77 (83.7%) 1 (1.1%) 4 (4.3%) 4 (4.3%) 6 (6.5%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
32	2	55	0.16	114.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 10 (10.9%) 51 (55.4%) 8 (8.7%) 0 (0.0%) 22 (23.9%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 1 (1.1%)
33	3	61	0.04	111.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 0 (0.0%) 12 (13.0%) 56 (60.9%) 14 (15.2%) 10 (10.9%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
34	5	65	0.00	110.3	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 0 (0.0%) 2 (2.2%) 2 (2.2%) 28 (30.4%) 60 (65.2%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
35	1	78	0.41	115.9	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 72 (78.3%) 12 (13.0%) 1 (1.1%) 2 (2.2%) 5 (5.4%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
36	3	43	0.54	126.0	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 4 (4.3%) 18 (19.6%) 40 (43.5%) 7 (7.6%) 23 (25.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
37	3	60	0.27	116.1	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 5 (5.4%) 3 (3.3%) 55 (59.8%) 14 (15.2%) 15 (16.3%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)
38	2	20	0.23	122.2	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 26 (28.3%) 18 (19.6%) 30 (32.6%) 8 (8.7%) 8 (8.7%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 2 (2.2%)
39	2	51	0.36	119.4	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 17 (18.5%) 47 (51.1%) 2 (2.2%) 9 (9.8%) 17 (18.5%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%)

Item	Correct Response(s)	Item Difficulty	Point Biserial Correlation	Average Score Cor. Res.	Response Frequency (Percent)	
40	4	46	0.44	122.7	0 1 2 3 4 5 6 7 8 9 Omit/Mult	0 (0.0%) 8 (8.7%) 16 (17.4%) 9 (9.8%) 42 (45.7%) 16 (17.4%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 0 (0.0%) 1 (1.1%)

Item Analysis Definitions

NOTES: Item Analysis
Above is a table that gives the information about the overall test reliability and about individual items to use in item and test improvement. See Appendix A for information on using these results in the classroom.

Frequency and Percent of Response Option shows the number (FRQ) and percent (%) of students who chose each of the possible answers to an item.

Item Number is the number of the item in the test. Any items omitted from scoring are not listed.

Correct Response(s) is the keyed correct response to the question. The correct response is also marked by bold text of the percent of responses listed to the right.

Item Difficulty shows the percent of students who answered the item correctly. Note that the higher the percentage, the easier the item.

Point Biseral Correlation shows the correlation between the item and the total score on the test and is used as an index of item discrimination. On highly discriminating items, students who know more about the subject matter in general do better than those who know less.

Response Frequency Frequency shows the number (FRQ) and percent (%) of students who chose each of the possible answers to the item. The correct response for a given item are indicated in bold.

Average Score Correct Response is the average score on the test for those who got the item correct.

Kuder-Richardson Formula 20 Reliability Coefficient (KR-20) is a measure of internal consistency reliability for measures with dichotomous choices. Values can range from 0.00 to 1.00 with high values indicating that the Examination is likely to correlate with alternate forms (a desirable characteristic). The KR20 is impacted by difficulty, spread in scores and length of the examination.

Scan Serial Reports

All Students

Name	ID	Scan Serial Number
30107, 30107	30107	3
30108, 30108	30108	4
30109, 30109	30109	5
30110, 30110	30110	6
30111, 30111	30111	7
30112, 30112	30112	8
30113, 30113	30113	9
30114, 30114	30114	10
30115, 30115	30115	11
30116, 30116	30116	12
30117, 30117	30117	13
30118, 30118	30118	14
30119, 30119	30119	15
30120, 30120	30120	16
30121, 30121	30121	17
30122, 30122	30122	18
30123, 30123	30123	19
30124, 30124	30124	20
30125, 30125	30125	21
30126, 30126	30126	22
30127, 30127	30127	23
30128, 30128	30128	24
30129, 30129	30129	25
30130, 30130	30130	26
30131, 30131	30131	27
30132, 30132	30132	28
30133, 30133	30133	29
30134, 30134	30134	30
30135, 30135	30135	31
30136, 30136	30136	32
30137, 30137	30137	33

Name	ID	Scan Serial Number
30138, 30138	30138	34
30139, 30139	30139	35
30140, 30140	30140	36
30141, 30141	30141	37
30142, 30142	30142	38
30143, 30143	30143	39
30144, 30144	30144	40
30145, 30145	30145	41
30146, 30146	30146	42
30147, 30147	30147	43
30148, 30148	30148	44
30149, 30149	30149	45
30150, 30150	30150	46
30151, 30151	30151	47
30152, 30152	30152	48
30153, 30153	30153	49
30154, 30154	30154	50
30155, 30155	30155	51
30156, 30156	30156	52
30157, 30157	30157	53
30158, 30158	30158	54
30159, 30159	30159	55
30160, 30160	30160	56
30161, 30161	30161	57
30162, 30162	30162	58
30163, 30163	30163	59
30164, 30164	30164	60
30165, 30165	30165	61
30166, 30166	30166	62
30167, 30167	30167	63
30168, 30168	30168	64
30169, 30169	30169	65
30170, 30170	30170	66
30171, 30171	30171	67
30172, 30172	30172	68
30173, 30173	30173	69

Name	ID	Scan Serial Number
30174, 30174	30174	70
30175, 30175	30175	71
30176, 30176	30176	72
30177, 30177	30177	73
30178, 30178	30178	74
30179, 30179	30179	75
30180, 30180	30180	76
30181, 30181	30181	77
30182, 30182	30182	78
30183, 30183	30183	79
30184, 30184	30184	80
30185, 30185	30185	81
30186, 30186	30186	82
30187, 30187	30187	83
30188, 30188	30188	84
30189, 30189	30189	85
30190, 30190	30190	86
30191, 30191	30191	87
30192, 30192	30192	88
30193, 30193	30193	89
30194, 30194	30194	90
30195, 30195	30195	91
30196, 30196	30196	92
30197, 30197	30197	93
30198, 30198	30198	94

Appendix A

Glossary

Average Score Correct Response is the average score on the test for those who got the question correct.

Confidence Level is a statistical range with a specified probability that a given parameter lies with the range.

Correct Response(s) is the keyed correct responce to the question. The correct responce is also marked by bold text of the percent of responses listed to the right.

Cumulated Percent is the percent of students at or below a given score.

Frequency is the number of students with a given score.

Frequency and Percent of Response Option shows the number (FRQ) and percent (%) of students who chose each of the possible answers to an item.

Item Difficulty shows the percent of students who answered the item correctly. The number of possible item responses affects how the difficulty is evaluated. Please see the chart below when analyzing the item difficulty percentage.

	2 Responses	3 Responses	4 Responses	5 Responses	6 Responses	10 Responses
Too Easy	91-100	88-100	86-100	85-100	84-100	83-100
Easy	81-90	74-87	71-85	69-84	67-83	65-82
Optimal	61-81	47-73	41-70	37-68	34-66	29-64
Hard	51-60	34-46	26-40	21-36	17-33	11-28
Too Hard	0-50	0-33	0-25	0-20	0-16	0-10

Item Number is the number of the item in the test.

Kuder-Richardson Formula 20 Reliability Coefficients (KR-20) is a measure of internal consistency reliability for measures with dichotomous choices. The reliability coefficient can range from 0 to 1. A coefficient of 0 for a test indicates no consistency. A coefficient of 1 indicates that exactly the same relative performance of one student would be expected on a parallel test of the same domain of knowledge. The KR20 is impacted by difficulty scores and length of the examination.

Mode is the most frequently appearing score (this is identified in the Raw Score column).

Percent is the percentages of students have each score.

Percentile Rank is the percent of students who scored below the mid-point of a given score.

Point Biserial Correlation shows the correlation between the item and the total score on the test, and is used as an index of item discrimination. A positive correlation shows that those correctly answering the item obtained higher average scores than those who incorrectly answered the item. A negative correlation indicates that those who got the item right had a lower average score than those who did not answer the item correctly. A near zero value suggests there is little relationship between total test scores and the item.

Raw Score is the number of items anwsered correctly.

Response Frequency show the number (FRQ) and percent (%) of students who chose each of the possible answers to the item. The correct response for a given item in indicated in bold.

Standard Score is computed by subtracting the population mean of the individual raw score and dividing the remainder by the standard deviation. The resulting scores have a mean of 50 and a standard devation of 10. This is also referred to as a z-score.

For more information about using your test results please contact our partners in the Center for Teaching and Learning Services. You can find out more information about what they can do for you by visiting their website: http://www1.umn.edu/ohr/teachlearn

Appendix B

Using Item Analysis Results

REGARDING THE PRESENT TEST.
If examination of the item analysis results indicate one or more seriously flawed items, you may want to modify the test scores, either by re-scoring the entire group with a new key or by adjusting the scores of students affected by the faulty item(s).

REGARDING FUTURE TESTS.
The primary application of item analyses is to improve future tests by identifying items that are not performing as expected, so that they can be improved.

- An extremely easy item may identify a topic that all students have learned; alternatively, the item may have no plausible distracters.

- Difficult or negatively discriminating items may be confusing or ambiguous, or may have more than one reasonably correct answer.

- Seldom chosen incorrect answers should be examined to see if they contain irrelevant clues. If no more than 5 percent of students, over time, select a given response, that response is contributing little to the item.

- Incorrect answers chosen more frequently by high scoring students than by low-scoring students should be examined to determine why they are discriminating negatively.

- Plotting the items on a chart with the difficulty level as one axis and the validity index as the other may be helpful in differentiating items that contribute to the test's objectives from those that may require modification.

Item data are influenced by chance errors, the nature of the group tested, the number of students tested and the instruction the class has received. The other items in the test also are important if most of the items in the test relate to a certain content area or a small number of items related to different content are likely to have lower discrimination indices. Whether or not an item measures an important instructional objective is a more important consideration than the magnitude of the difficulty and validity indices. One should not be too hasty in discarding items with poor statistics from a single administration. If an item discriminates positively, is clear and unambiguous, is free from technical defects and measures an important instructional objective, it may be retained for another try in the future. Item statistics should probably be used more for item improvement than for discarding items.

Remember that the item analysis applications described above apply to tests whose objective is to provide maximum discrimination among all students taking the test. Different test characteristics are required if the objective is to determine whether all students have achieved mastery of certain material or to provide the greatest reliability of measurement at a specific cutting point.