LIST OF FIGURES

Figure 1.1 Test Information Curves of Base Form vs. Current Year's Math Operational Test	
Form	22
Figure 1.2 Standard Error Curves of Base Form vs. Current Year's Math Operational Test	
Form	. 22
Figure 1.3 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 3 Form A	52
Figure 1.4 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 3 Form F	56
Figure 1.5 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 4 Form A	60
Figure 1.6 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 4 Form F	64
Figure 1.7 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 5 Form A	68
Figure 1.8 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 5 Form F	72
Figure 1.9 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 6 Form A	76
Figure 1.10 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 6 Form F	80
Figure 1.11 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 7 Form A	84
Figure 1.12 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 7 Form F	88
Figure 1.13 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 8 Form A	93
Figure 1.14 Rasch Item Difficulty Comparisons of Core Items	
for Previous Year vs. Year 2009: Grade 8 Form F	98
Figure 1.15 Anchor Evaluation Steps Chart for MSA-Math	101
Figure 1.16 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 3 Form A	104
Figure 1.17 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 3 Form F	104
Figure 1.18 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 4 Form A	107
Figure 1.19 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 4 Form F	107
Figure 1.20 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 5 Form A	110
Figure 1.21 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 5 Form F	110
Figure 1.22 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 6 Form A	113
Figure 1.23 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	

Grade 6 Form F	113
Figure 1.24 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 7 Form A	116
Figure 1.25 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 7 Form F	116
Figure 1.26 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 8 Form A	119
Figure 1.27 Item Difficulty Plot of Previous Year Form vs. Current Year Form:	
Grade 8 Form F	119
Figure 3.1 Item Characteristic Curve	150
Figure 3.2 Category Response Curves for a One-Step Item	151
Figure 3.3 Category Response Curves for a Two-Step Item	152
Figure B.1 Year 2006 Scale Score Distribution: Grade 3	232
Figure B.2 Year 2009 Scale Score Distribution: Grade 3 Form A	233
Figure B.3 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sc	cale
Scores with the Percent Differences between CDFs: Grade 3 Form A	234
Figure B.4 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sc	cale
Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form A	234
Figure B.5 Year 2009 Scale Score Distribution: Grade 3 Form F	235
Figure B.6 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sc	cale
Scores with the Percent Differences between CDFs: Grade 3 Form F	236
Figure B.7 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sc	cale
Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form F	236
Figure B.8 Year 2006 Scale Score Distribution: Grade 4	237
Figure B.9 Year 2009 Scale Score Distribution: Grade 4 Form A	238
Figure B.10 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Percent Differences between CDFs: Grade 4 Form A	239
Figure B.11 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Cumulative Percent Differences between CDFs: Grade 4 Form A	239
Figure B.12 Year 2009 Scale Score Distribution: Grade 4 Form F	240
Figure B.13 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Percent Differences between CDFs: Grade 4 Form F	241
Figure B.14 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Cumulative Percent Differences between CDFs: Grade 4 Form F	241
Figure B.15 Year 2006 Scale Score Distribution: Grade 5	242
Figure B.16 Year 2009 Scale Score Distribution: Grade 5 Form A	243
Figure B.17 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Percent Differences between CDFs: Grade 5 Form A	244
Figure B.18 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form A	244
Figure B.19 Year 2009 Scale Score Distribution: Grade 5 Form F	245
Figure B.20 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Percent Differences between CDFs: Grade 5 Form F	246
Figure B.21 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 S	Scale
Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form F	246
Figure B.22 Year 2006 Scale Score Distribution: Grade 6	247

Figure B.23	3 Year 2009 Scale Score Distribution: Grade 6 Form A	248
Figure B.24	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Percent Differences between CDFs: Grade 6 Form A	249
Figure B.25	5 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Sec	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 6 Form A	249
Figure B.26	5 Year 2009 Scale Score Distribution: Grade 6 Form F	250
Figure B.27	⁷ Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 S	cale
Scores	with the Percent Differences between CDFs: Grade 6 Form F	251
Figure B.28	8 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Sec	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 6 Form F	251
Figure B.29	9 Year 2006 Scale Score Distribution: Grade 7	252
Figure B.30) Year 2009 Scale Score Distribution: Grade 7 Form A	253
Figure B.31	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Percent Differences between CDFs: Grade 7 Form A	254
Figure B.32	2 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Sec	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 7 Form A	254
Figure B.33	3 Year 2009 Scale Score Distribution: Grade 7 Form F	255
Figure B.34	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Percent Differences between CDFs: Grade 7 Form F	256
Figure B.35	5 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Sec	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 7 Form F	256
Figure B.36	5 Year 2006 Scale Score Distribution: Grade 8	257
Figure B.37	VYear 2009 Scale Score Distribution: Grade 8 Form A	258
Figure B.38	8 Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Sec	cale
Scores	with the Percent Differences between CDFs: Grade 8 Form A	259
Figure B.39	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 8 Form A	259
Figure B.40) Year 2009 Scale Score Distribution: Grade 8 Form F	260
Figure B.41	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Percent Differences between CDFs: Grade 8 Form F	261
Figure B.42	Cumulative Distribution Functions (CDFs) for the Year 2006 vs. Year 2009 Sector 2009 Secto	cale
Scores	with the Cumulative Percent Differences between CDFs: Grade 8 Form F	261