TIMSS Numeracy 2015 Mathematics Item Parameters

Item		Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})
N01_01	MN11135	0.808 (0.088)	-1.263 (0.135)	0.228 (0.050)		
N01_02	MN11114	1.266 (0.074)	-0.287 (0.037)			
N01_03	MN11216	1.342 (0.072)	-0.862 (0.032)			
N01_04	MN11255	1.010 (0.104)	-0.848 (0.085)	0.203 (0.035)		
N01_05	MN11027	1.023 (0.057)	-1.115 (0.039)			
N01_06	MN11259	1.624 (0.166)	-0.337 (0.046)	0.180 (0.019)		
N01_07	MN11031	0.813 (0.078)	-1.299 (0.114)	0.163 (0.044)		
N01_08	MN11227	0.549 (0.047)	0.379 (0.111)			
N01_09	MN11267	0.636 (0.047)	-2.646 (0.106)			
N01_10	MN11042	0.624 (0.042)	-1.133 (0.057)			
N01_11	MN11184	0.793 (0.050)	-0.664 (0.048)			
N01_12	MN11190	1.129 (0.069)	-0.220 (0.042)			
N01_13	MN11193	1.745 (0.267)	0.172 (0.059)	0.288 (0.018)		
N02_01	MN11009	0.842 (0.092)	-0.959 (0.112)	0.204 (0.042)		
N02_02	MN11024	1.015 (0.058)	-0.783 (0.039)			
N02_03	MN11134	1.188 (0.139)	-0.477 (0.072)	0.257 (0.028)		
N02_04	MN11212	0.871 (0.051)	-1.142 (0.044)			
N02_05	MN11253	1.028 (0.105)	-0.868 (0.084)	0.201 (0.034)		
N02_06	MN11221	2.020 (0.211)	-0.146 (0.038)	0.147 (0.015)		
N02_07	MN11146	0.740 (0.049)	-0.332 (0.057)			
N02_08	MN11177	1.258 (0.080)	0.005 (0.044)			
N02_09	MN11158	0.598 (0.042)	-0.884 (0.059)			
N02_10	MN11002	1.280 (0.197)	0.297 (0.073)	0.217 (0.019)		
N02_11A	MN11182A	0.953 (0.090)	-2.142 (0.138)	0.218 (0.060)		
N02_11B	MN11182B	0.952 (0.089)	-1.591 (0.113)	0.200 (0.048)		
N02_12	MN11272	0.747 (0.053)	1.001 (0.096)		-0.232 (0.082)	0.232 (0.141)
N03_01	MN11017	0.741 (0.047)	-1.982 (0.067)			
N03_02	MN11125	0.843 (0.052)	-0.515 (0.047)			
N03_03	MN11077	1.111 (0.070)	-0.109 (0.045)			
N03_04A	MN11047A	1.054 (0.093)	-1.920 (0.106)	0.186 (0.049)		
N03_04B	MN11047B	1.130 (0.103)	-1.570 (0.094)	0.212 (0.043)		
N03_05	MN11223	1.115 (0.068)	-0.243 (0.042)			
N03_06	MN11034	0.907 (0.126)	-0.004 (0.083)	0.174 (0.026)		
N03_07	MN11175	1.031 (0.060)	-0.558 (0.040)			
N03_08	MN11262	0.830 (0.123)	-0.031 (0.095)	0.196 (0.031)		
N03_09	MN11239	0.702 (0.155)	0.618 (0.152)	0.207 (0.031)		
N03_10	MN11202	0.842 (0.050)	-1.200 (0.046)			
N03_11	MN11299	1.193 (0.068)	-0.572 (0.036)			
N04_01 *	M061272	0.910 (0.038)	0.121 (0.028)			
N04_02 *	M061243	0.477 (0.015)	-0.220 (0.031)		-0.923 (0.072)	0.923 (0.068)
N04_03 *	M061029	1.151 (0.072)	-0.226 (0.055)	0.139 (0.027)		
N04_04 *	M061031	1.497 (0.087)	0.563 (0.027)	0.066 (0.012)		
N04_05 *	M061050	1.427 (0.104)	0.596 (0.036)	0.184 (0.017)		
N04_06 *	M061167	0.730 (0.033)	-0.826 (0.047)			
N04_07 *	M061206	0.723 (0.069)	0.755 (0.070)	0.105 (0.027)		
N04_08A	M061265A	0.775 (0.083)	1.308 (0.181)			
N04_08B *	M061265B	0.991 (0.103)	1.125 (0.057)	0.183 (0.019)		
N04_09 *	M061185	0.980 (0.063)	-0.503 (0.076)	0.114 (0.036)		
N04_10 *	M061239	1.408 (0.056)	-0.587 (0.026)			

TIMSS Numeracy 2015 Mathematics Item Parameters

Item		Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})
N05_01	MN11076	0.838 (0.087)	-1.454 (0.135)	0.224 (0.051)		
N05_02	MN11141	1.011 (0.056)	-1.115 (0.040)			
N05_03	MN11142	1.693 (0.156)	-0.420 (0.041)	0.133 (0.017)		
N05_04	MN11005	2.124 (0.240)	-0.223 (0.040)	0.225 (0.017)		
N05_05A	MN11256A	0.983 (0.056)	-1.617 (0.046)			
N05_05B	MN11256B	0.944 (0.054)	-1.104 (0.042)			
N05_06	MN11108	1.113 (0.075)	0.151 (0.054)			
N05_07	MN11062	0.322 (0.035)	-0.295 (0.124)			
N05_08	MN11174	0.695 (0.048)	-0.264 (0.062)			
N05_09	MN11067	0.455 (0.070)	-1.218 (0.299)	0.230 (0.074)		
N05_10	MN11043	0.633 (0.056)	-3.583 (0.175)			
N05_11	MN11268	0.725 (0.081)	-0.621 (0.102)	0.130 (0.035)		
N05_12	MN11270	1.152 (0.069)	-0.319 (0.040)			
N06_01	MN11019	0.959 (0.110)	-0.686 (0.091)	0.222 (0.034)		
N06_02	MN11145	0.973 (0.055)	-1.389 (0.043)			
N06_03	MN11211	1.895 (0.172)	-0.683 (0.041)	0.175 (0.020)		
N06_04	MN11014	0.997 (0.059)	-0.475 (0.042)			
N06_05	MN11300	1.071 (0.065)	-0.307 (0.042)			
N06_06	MN11028	1.265 (0.068)	-0.974 (0.034)			
N06_07	MN11231	1.578 (0.339)	0.783 (0.100)	0.199 (0.015)		
N06_08	MN11061	0.795 (0.077)	-2.067 (0.160)	0.204 (0.062)		
N06_09	MN11045	0.953 (0.104)	-0.755 (0.090)	0.200 (0.035)		
N06_10	MN11265	0.760 (0.081)	-2.244 (0.203)	0.261 (0.075)		
N06_11	MN11154	0.594 (0.028)	-0.521 (0.040)		-0.392 (0.077)	0.392 (0.083)
N06_12	MN11240	1.000 (0.197)	0.454 (0.108)	0.267 (0.024)		
N07_01	MN11023	1.494 (0.146)	-0.743 (0.057)	0.227 (0.026)		
N07_02	MN11056	1.062 (0.107)	-0.655 (0.072)	0.169 (0.029)		
N07_03	MN11057	1.110 (0.061)	-1.239 (0.038)			
N07_04	MN11113	0.899 (0.052)	-1.102 (0.043)			
N07_05	MN11200	0.436 (0.019)	-2.284 (0.067)		-1.923 (0.164)	1.923 (0.145)
N07_06	MN11129	1.269 (0.140)	-0.392 (0.062)	0.209 (0.025)		
N07_07	MN11218	0.726 (0.047)	-1.868 (0.065)			
N07_08	MN11036	1.224 (0.157)	0.143 (0.064)	0.157 (0.019)		
N07_09	MN11225	0.652 (0.048)	-0.063 (0.073)			
N07_10	MN11041	0.862 (0.122)	-0.547 (0.122)	0.305 (0.040)		
N07_11	MN11179	0.855 (0.057)	-0.068 (0.058)			
N07_12	MN11303	1.002 (0.075)	0.439 (0.072)			
N07_13	MN11305	0.910 (0.184)	0.445 (0.116)	0.272 (0.027)		
N08_01 *	M061026	0.920 (0.055)	-0.764 (0.079)	0.043 (0.038)		
N08_02 *	M061273	0.815 (0.065)	0.246 (0.073)	0.119 (0.031)		
N08_03 *	M061034	1.230 (0.051)	0.673 (0.025)			
N08_04 *	M061040	1.711 (0.117)	0.601 (0.030)	0.169 (0.015)		
N08_05 *	M061228	0.780 (0.026)	0.878 (0.026)		-0.309 (0.042)	0.309 (0.050)
N08_06 *	M061166	1.141 (0.045)	-0.158 (0.025)			
N08_07 *	M061171	1.316 (0.086)	-0.240 (0.054)	0.201 (0.028)		
N08_08 *	M061080	0.854 (0.039)	0.598 (0.033)			
N08_09 *	M061222	0.904 (0.094)	0.401 (0.089)	0.326 (0.032)		
N08_10 *	M061076	0.583 (0.030)	-0.477 (0.048)			
N08_11 *	M061084	1.119 (0.050)	0.869 (0.031)			

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Item		Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})
N09_01	MN11128	0.946 (0.057)	-0.446 (0.044)			
N09_02	MN11022	1.170 (0.065)	-1.466 (0.038)			
N09_03	MN11010	1.120 (0.064)	-0.476 (0.038)			
N09_04A	MN11278A	1.186 (0.103)	-1.633 (0.087)	0.191 (0.043)		
N09_04B	MN11278B	1.565 (0.179)	0.051 (0.049)	0.144 (0.016)		
N09_05	MN11136	0.940 (0.054)	-1.033 (0.041)			
N09_06	MN11261	0.975 (0.064)	0.037 (0.055)			
N09_07	MN11033	0.359 (0.035)	-1.269 (0.095)			
N09_08	MN11039	0.615 (0.063)	-1.913 (0.190)	0.176 (0.063)		
N09_09	MN11040	0.381 (0.064)	-0.592 (0.279)	0.172 (0.064)		
N09_10	MN11195	0.644 (0.052)	0.452 (0.103)			
N09_11	MN11188	0.521 (0.043)	-0.087 (0.088)			
N09_12	MN11252	1.793 (0.208)	-0.041 (0.046)	0.183 (0.017)		
N10_01	MN11055	0.939 (0.056)	-1.740 (0.050)			
N10_02	MN11214	1.234 (0.127)	-0.693 (0.068)	0.222 (0.029)		
N10_03A	MN11116A	1.003 (0.059)	-1.807 (0.049)			
N10_03B	MN11116B	1.049 (0.062)	-0.362 (0.042)			
N10_04A	MN11066A	1.105 (0.066)	-0.256 (0.042)			
N10_04B	MN11066B	1.162 (0.075)	0.063 (0.049)			
N10_05	MN11260	1.546 (0.140)	-0.819 (0.052)	0.188 (0.025)		
N10_06	MN11032	0.874 (0.077)	-1.340 (0.097)	0.137 (0.039)		
N10_07	MN11170	0.503 (0.075)	-0.643 (0.200)	0.177 (0.056)		
N10_08	MN11068	0.527 (0.039)	-1.109 (0.066)			
N10_09	MN11269	0.968 (0.056)	-1.415 (0.043)			
N10_10	MN11001	1.049 (0.137)	-0.071 (0.074)	0.196 (0.025)		
N10_11	MN11235	0.501 (0.029)	0.697 (0.088)		-0.796 (0.106)	0.796 (0.144)

* Items with fixed item parameters estimated in TIMSS 2015 fourth grade item calibration.