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29 January 2007

I, Belinda Huntley, Staff Number 08901381, hereby declare that I will not use the information furnished to me by the University of the Witwatersrand in a manner that will bring the University in disrepute or in a way that it could be traced back to the University. I further agree that my research may be used by the University if it so desired. The Registrar has approved the use of this e-mail contact because of the importance the University attaches to the survey. Permission was granted on the understanding that you are not obliged to respond and that you may curtail your involvement at any time in the process

Signature *B.Huntley*.....

Date:2007/01/28.....

Table 1.2: Exit level outcomes (ELOs) of the undergraduate curriculum*

Exit Level Outcomes (ELOs)

The qualifying learner:

1. generates, explores and considers options and makes decisions about ways of seeing systems and situations, and considers different ways of applying and integrating scientific knowledge to solve theoretical, applied or real life problems *specifically through research and the production of a research project*
2. demonstrates an *advanced* understanding of key aspects of specified scientific systems and situations
3. demonstrates an *advanced* understanding of specified bodies of content and their inter-connectedness in chosen disciplines
4. demonstrates an *advanced* understanding of the boundaries, inter-connections, value and knowledge creation systems of chosen disciplines within the sciences
5. reflects on possible implications for self and system of different ways of seeing and intervening in systems and situations
6. demonstrates an ability to reflect with self and others, critical of own and other peoples' thoughts and actions, and capable of self-organisation and working in groups in the face of continual challenge from the environment
7. demonstrates consciousness of, and engagement with own learning processes and the nature of knowledge, and how new knowledge can be acquired
8. demonstrates an ability to conduct oneself as an independent learner and practitioner.
9. *demonstrates an ability to reflect on the importance of scientific paradigms and methods in understanding scientific concepts and their changing nature*

(Source: Executive Information System, School of Mathematics, Academic Review 2000-2004, University of the Witwatersrand)

**italicised text* refers to the BScHons degree only; other text is common to the BSc and BScHons degrees

Table 1.3: Associated assessment criteria (AAC)*

| |
|--|
| <p>A. The learner should demonstrate an ability to consider a range of options and make decision about:</p> <p>A.1 ways of seeing systems and situations, and to consider different ways of applying and integrating scientific knowledge to solve theoretical, applied or real life problems</p> <p>A.2 methods for integrating information to solve complex problems</p> <p>A.3 appropriate methods to carry out investigations to solve problems</p> <p>A.4 appropriate use of quantitative techniques in the chosen discipline</p> <p>A.5 selecting and appropriate method for communicating a set of data</p> <p>A.6 the most appropriate personal learning strategies and organisation of work.</p> <p>A.7 <i>awareness of quality control, scientific standards and ethical norms as they pertain to the application of their chosen discipline in scientific investigations and the work place</i></p> <p>A.8 <i>awareness of the career path and professional responsibilities that accompany their chosen discipline.</i></p> <p>B. The learner should demonstrate an understanding of:</p> <p>B.1 the use of critical thinking and logic in analysing situations</p> <p>B.2 information storage and retrieval systems</p> <p>B.3 <u>basic computing skills</u>; <i>effective communication and competent application of the relevant techniques including numerical and computer skills</i></p> <p>B.4 <i>how to prepare a written scientific document; how to design, execute and present scientific investigations such as through a small scale scientific report/research project</i></p> <p>B.5 modes of communicating, interpreting and translating data</p> <p>B.6 relevant uses of quantitative methods to analyse and check for the plausibility of data</p> <p>B.7 how to design and carry out scientific investigations</p> <p>B.8 <u>fundamental/advances</u> techniques in the discipline</p> <p>C. The learner should demonstrate an ability to reflect on and critically evaluate:</p> <p>C.1 the use of <i>advanced</i> investigative techniques and their strengths and weaknesses</p> <p>C.2 the appropriateness of own interventions including strengths and weaknesses and possible future improvement of these</p> <p>C.3 the relative merits of issues raised by science and technology and the relevance of science to everyday life and global issues</p> <p>C.4 successes, strengths and weaknesses and possible improvement of personal learning strategies</p> <p>C.5 own and other peoples' participation in a culturally and racially diverse learning situations and society.</p> <p>C.6 <i>scientific paradigms and methods in understanding scientific concepts and their changing nature</i></p> <p>C.7 <i>the practice and application of knowledge and understanding they have acquired of their chosen discipline in the workplace</i></p> |
|--|

(Source: Executive Information System, School of Mathematics, Academic Review 2000-2004, University of the Witwatersrand)

**italicised text* refers to the BScHons degree only; underlined text refers to the BSc degree only; other text is common to the BSc and BScHons degrees

Table 1.4: Critical cross-field outcomes (CCFOs)

| | |
|----------|--|
| CCFO (a) | identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made. |
| CCFO (b) | working with others as a member of a team, group, organisation, community. |
| CCFO (c) | organising and managing oneself and one's activities responsibly and effectively. |
| CCFO (d) | collecting, analysing, organising and critically evaluating information. |
| CCFO (e) | communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion. |
| CCFO (f) | using science and technology effectively and critically, showing responsibility towards the environment and health of others. |
| CCFO (g) | demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation. |
| CCFO (h) | contributing to the full personal development of each learner and the social and economic development of society at large, by making it the underlying intention of any programme of learning to make an individual aware of the importance of: <ol style="list-style-type: none"> 1. reflecting on and exploring a variety of strategies to learn more effectively; 2. participating as responsible citizens in the life of local, national and global communities; 3. being culturally and aesthetically sensitive across a range of social contexts; 4. exploring education and career opportunities; 5. developing entrepreneurial opportunities. |

(Source: Executive Information System, School of Mathematics, Academic Review 2000-2004, University of the Witwatersrand)

Appendix A5

Table 6.2: Misfitting and discarded test items

| Item | Item difficulty | Model SE | INFIT | | OUTFIT | | PTMEA CORR |
|----------------|-----------------|----------|-------|------|--------|------|------------|
| | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| C45MB7 | -3.94 | 0.47 | 0.83 | -0.3 | 0.25 | -1.5 | 0.26 |
| C561B | -3.47 | 0.62 | 0.74 | -0.4 | 0.29 | -1.2 | 0.44 |
| C46MA6 | 1.72 | 0.23 | 1.21 | 2.0 | 1.67 | 3.0 | 0.33 |
| I036M04 | -2.71 | 0.22 | 0.91 | -0.6 | 0.45 | -2.3 | 0.50 |
| C361B | -3.31 | 0.36 | 0.86 | -0.4 | 0.49 | -1.4 | 0.32 |
| C35M02 | -3.61 | 0.47 | 1.11 | 0.4 | 1.61 | 1.1 | 0.08 |
| C45MB6 | -2.1 | 0.17 | 1.19 | 2.0 | 1.64 | 2.8 | 0.36 |

Test items Rasch statistics

| ITEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|-----------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MNSQ | ZSTD | MNSQ | ZSTD | |
| C35M01 | 216 | 295 | -0.36 | 0.15 | 1.02 | 0.3 | 1.02 | 0.2 | 0.49 |
| C35M02 | 174 | 179 | -3.94 | 0.47 | 0.83 | -0.3 | 0.25 | -1.5 | 0.26 |
| C35M03 | 242 | 297 | -0.97 | 0.17 | 0.99 | 0 | 1.06 | 0.4 | 0.44 |
| C35M04 | 276 | 298 | -2.27 | 0.24 | 1.02 | 0.2 | 0.75 | -0.7 | 0.33 |
| C35M05 | 214 | 295 | -0.32 | 0.15 | 1.19 | 2.5 | 1.25 | 2.1 | 0.41 |
| A35M06 | 185 | 296 | 0.26 | 0.14 | 0.87 | -2.2 | 0.82 | -2.3 | 0.62 |
| A35M07 | 238 | 297 | -0.89 | 0.16 | 0.95 | -0.5 | 0.95 | -0.2 | 0.48 |
| A35M08 | 73 | 278 | 2.25 | 0.15 | 1.03 | 0.5 | 1.02 | 0.2 | 0.68 |
| A45MA146 | 253 | 418 | 0.2 | 0.11 | 1.01 | 0.2 | 0.98 | -0.2 | 0.54 |
| A45MA246 | 300 | 415 | -0.5 | 0.12 | 0.95 | -0.8 | 0.91 | -0.8 | 0.53 |
| A45MA346 | 323 | 417 | -0.85 | 0.13 | 0.96 | -0.5 | 0.87 | -1 | 0.5 |
| A45MA4 | 80 | 197 | 1.11 | 0.16 | 1.04 | 0.6 | 1.1 | 1 | 0.58 |
| C45MA5 | 148 | 200 | -0.7 | 0.18 | 1 | 0.1 | 1.03 | 0.3 | 0.48 |
| C45MA6 | 189 | 200 | -2.84 | 0.33 | 0.98 | 0 | 0.69 | -0.6 | 0.3 |
| C45MA7 | 119 | 199 | 0.13 | 0.16 | 0.93 | -1 | 0.93 | -0.8 | 0.58 |
| C45MA8 | 118 | 127 | -2.98 | 0.36 | 1.14 | 0.6 | 1.2 | 0.6 | 0.2 |
| A45MB146 | 115 | 215 | 0.34 | 0.16 | 0.88 | -1.9 | 0.8 | -2.1 | 0.58 |
| A45MB246 | 118 | 215 | 0.25 | 0.16 | 0.91 | -1.5 | 0.83 | -1.8 | 0.56 |
| A45MB346 | 171 | 216 | -1.18 | 0.19 | 1.05 | 0.5 | 0.88 | -0.6 | 0.39 |
| A45MB4 | 43 | 116 | 1.56 | 0.22 | 1.02 | 0.2 | 1.2 | 1.2 | 0.46 |
| C45MB5 | 36 | 117 | 1.91 | 0.23 | 1.18 | 1.6 | 1.24 | 1.2 | 0.35 |
| C45MB6 | 46 | 49 | -3.47 | 0.62 | 0.74 | -0.4 | 0.29 | -1.2 | 0.44 |
| C45MB7 | 37 | 108 | 1.72 | 0.23 | 1.21 | 2 | 1.67 | 3 | 0.33 |
| C45MB8 | 88 | 100 | -1.94 | 0.34 | 0.94 | -0.2 | 0.67 | -0.8 | 0.42 |
| C55M01 | 257 | 327 | -0.5 | 0.15 | 1.1 | 1.3 | 1.06 | 0.4 | 0.36 |
| C55M02 | 240 | 328 | -0.13 | 0.14 | 0.95 | -0.7 | 1.06 | 0.5 | 0.46 |
| C55M03 | 179 | 322 | 0.9 | 0.13 | 1.16 | 2.8 | 1.28 | 2.8 | 0.44 |
| C55M04 | 145 | 328 | 1.5 | 0.13 | 1.02 | 0.3 | 1.03 | 0.4 | 0.55 |
| C55M05 | 227 | 328 | 0.12 | 0.14 | 0.91 | -1.5 | 0.85 | -1.1 | 0.51 |
| A55M06 | 21 | 251 | 4.56 | 0.24 | 0.91 | -0.5 | 0.66 | -1.1 | 0.73 |
| A55M07 | 226 | 284 | -0.76 | 0.16 | 1.05 | 0.6 | 1.13 | 0.9 | 0.33 |
| A55M08 | 223 | 324 | 0.15 | 0.14 | 0.86 | -2.2 | 0.74 | -2.2 | 0.53 |
| I65M0166 | 396 | 664 | 0.27 | 0.09 | 1.2 | 4.9 | 1.34 | 5.2 | 0.37 |
| I65M0266 | 303 | 652 | 0.98 | 0.09 | 0.99 | -0.1 | 0.98 | -0.4 | 0.54 |
| I65M0366 | 516 | 638 | -1.1 | 0.11 | 0.95 | -0.9 | 0.88 | -1 | 0.41 |
| I65M0466 | 416 | 669 | 0.14 | 0.09 | 1.04 | 1.1 | 1.04 | 0.7 | 0.46 |
| I65M0566 | 342 | 662 | 0.7 | 0.09 | 1.03 | 0.9 | 1.01 | 0.3 | 0.5 |
| I65M06 | 279 | 324 | -1.36 | 0.17 | 0.99 | -0.1 | 1.1 | 0.6 | 0.32 |
| I65M0766 | 546 | 675 | -1.04 | 0.11 | 0.93 | -1.1 | 1.01 | 0.1 | 0.41 |
| I65M08 | 271 | 328 | -1.04 | 0.16 | 0.98 | -0.2 | 0.95 | -0.3 | 0.35 |
| I65M09 | 127 | 349 | 1.72 | 0.12 | 0.81 | -3.7 | 0.77 | -2.9 | 0.66 |
| I65M10 | 125 | 343 | 1.73 | 0.13 | 0.91 | -1.7 | 0.9 | -1.2 | 0.61 |
| I65M1166 | 395 | 644 | 0.18 | 0.09 | 0.99 | -0.2 | 0.93 | -1.1 | 0.5 |
| I65M1266 | 218 | 631 | 1.62 | 0.09 | 1.13 | 2.9 | 1.23 | 3 | 0.49 |
| A651A663 | 394 | 686 | 1.1 | 0.09 | 0.98 | -0.6 | 0.87 | -1.8 | 0.57 |
| A651B | 87 | 353 | 2.97 | 0.14 | 1.01 | 0.1 | 0.93 | -0.5 | 0.61 |
| A652A | 283 | 369 | -0.33 | 0.14 | 1 | 0 | 1.05 | 0.3 | 0.47 |
| A652B561B | 95 | 353 | 2.81 | 0.14 | 1.09 | 1.2 | 1.16 | 1.2 | 0.57 |
| A653 | 274 | 369 | -0.15 | 0.14 | 1.09 | 1.3 | 1.15 | 0.9 | 0.45 |
| C651A662A | 749 | 957 | -0.9 | 0.09 | 0.87 | -2.7 | 0.75 | -2 | 0.54 |
| C651B662B | 512 | 652 | -0.33 | 0.11 | 0.98 | -0.3 | 1.06 | 0.5 | 0.45 |
| C651C | 250 | 369 | 0.27 | 0.13 | 0.99 | -0.2 | 0.91 | -0.7 | 0.53 |
| C651D662E | 506 | 686 | 0.1 | 0.1 | 1.01 | 0.2 | 0.97 | -0.2 | 0.48 |
| C651E662G | 430 | 686 | 0.8 | 0.09 | 1 | -0.1 | 1.03 | 0.3 | 0.53 |
| C652A | 273 | 335 | -0.84 | 0.16 | 1.07 | 0.8 | 0.96 | -0.2 | 0.41 |
| C652B | 254 | 369 | 0.2 | 0.13 | 0.99 | -0.1 | 0.8 | -1.5 | 0.53 |
| C652C | 260 | 369 | 0.1 | 0.13 | 1.01 | 0.2 | 0.83 | -1.2 | 0.51 |
| C652D | 95 | 353 | 2.81 | 0.14 | 1.03 | 0.4 | 0.92 | -0.6 | 0.6 |



| ITEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|----------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MNSQ | ZSTD | MNSQ | ZSTD | |
| C653A | 229 | 256 | -1.93 | 0.22 | 1.06 | 0.4 | 1.14 | 0.6 | 0.31 |
| C653B | 282 | 335 | -1.07 | 0.16 | 1.02 | 0.3 | 1.15 | 0.8 | 0.39 |
| C654 | 249 | 369 | 0.29 | 0.13 | 1.08 | 1.3 | 1.22 | 1.6 | 0.48 |
| A85M0184 | 279 | 771 | 1.22 | 0.08 | 0.97 | -0.8 | 0.92 | -1.3 | 0.52 |
| A85M0284 | 427 | 773 | 0.24 | 0.08 | 1.17 | 5 | 1.19 | 3.7 | 0.36 |
| A85M0384 | 472 | 771 | -0.08 | 0.08 | 0.91 | -2.6 | 0.86 | -2.6 | 0.52 |
| A85M0484 | 400 | 772 | 0.41 | 0.08 | 0.92 | -2.6 | 0.88 | -2.6 | 0.53 |
| A85M0584 | 572 | 640 | -2.31 | 0.14 | 0.93 | -0.7 | 0.73 | -2 | 0.38 |
| C85M0684 | 182 | 754 | 1.96 | 0.09 | 1.15 | 2.9 | 1.32 | 3.4 | 0.38 |
| C85M0784 | 565 | 724 | -1.17 | 0.1 | 1 | 0.1 | 1.03 | 0.3 | 0.38 |
| C85M0884 | 301 | 775 | 1.08 | 0.08 | 0.93 | -2.1 | 0.98 | -0.3 | 0.53 |
| C85M0984 | 472 | 770 | -0.08 | 0.08 | 1.04 | 1.1 | 1.05 | 0.9 | 0.44 |
| C85M1084 | 382 | 772 | 0.53 | 0.08 | 0.98 | -0.7 | 0.98 | -0.4 | 0.49 |
| I95M01 | 225 | 352 | -0.61 | 0.13 | 0.97 | -0.5 | 0.89 | -1 | 0.54 |
| I95M02 | 197 | 220 | -3.22 | 0.24 | 0.95 | -0.2 | 0.75 | -0.9 | 0.34 |
| I95M03 | 133 | 350 | 0.84 | 0.13 | 0.99 | -0.2 | 0.99 | -0.1 | 0.54 |
| I95M04 | 208 | 355 | -0.3 | 0.13 | 1.1 | 1.7 | 1.27 | 2.7 | 0.46 |
| I95M05 | 104 | 346 | 1.3 | 0.13 | 1 | -0.1 | 1.09 | 0.7 | 0.52 |
| I95M06 | 197 | 351 | -0.16 | 0.13 | 1 | 0 | 1.08 | 0.9 | 0.52 |
| I95M07 | 94 | 348 | 1.49 | 0.14 | 1.07 | 1 | 1.17 | 1.1 | 0.48 |
| I95M08 | 92 | 346 | 1.52 | 0.14 | 0.86 | -2.1 | 0.74 | -1.7 | 0.6 |
| A951 | 185 | 363 | 0.67 | 0.12 | 1.02 | 0.5 | 1.02 | 0.2 | 0.5 |
| A952A | 188 | 363 | 0.63 | 0.12 | 0.99 | -0.2 | 0.92 | -0.8 | 0.52 |
| A952B | 270 | 341 | -1.15 | 0.15 | 1.23 | 2.6 | 1.22 | 1.3 | 0.3 |
| A952C | 189 | 363 | 0.61 | 0.12 | 0.96 | -0.8 | 0.97 | -0.2 | 0.53 |
| A952D | 112 | 355 | 1.8 | 0.13 | 1.07 | 1.2 | 1.08 | 0.7 | 0.46 |
| A953A | 265 | 341 | -1.04 | 0.15 | 1.02 | 0.3 | 1.1 | 0.7 | 0.42 |
| A953B | 273 | 341 | -1.22 | 0.15 | 0.86 | -1.7 | 0.68 | -2.2 | 0.53 |
| A953C | 101 | 355 | 2 | 0.13 | 0.89 | -1.7 | 0.83 | -1.4 | 0.57 |
| C951 | 172 | 359 | 0.86 | 0.12 | 1 | 0 | 0.96 | -0.4 | 0.51 |
| C952 | 183 | 363 | 0.7 | 0.12 | 1.03 | 0.5 | 1.01 | 0.2 | 0.5 |
| C953A | 28 | 29 | -5.56 | 1.03 | 0.94 | 0.2 | 0.41 | -0.3 | 0.15 |
| C953B | 80 | 345 | 2.4 | 0.14 | 1.31 | 3.6 | 1.36 | 2.3 | 0.31 |
| C953CI | 273 | 318 | -1.83 | 0.18 | 0.91 | -0.8 | 0.84 | -0.7 | 0.44 |
| C953CII | 224 | 363 | 0.08 | 0.13 | 0.93 | -1.2 | 0.84 | -1.5 | 0.54 |
| C953D | 221 | 363 | 0.13 | 0.12 | 0.92 | -1.6 | 0.85 | -1.5 | 0.55 |
| C954 | 272 | 341 | -1.2 | 0.15 | 0.93 | -0.8 | 0.95 | -0.3 | 0.46 |
| C955 | 251 | 288 | -2.09 | 0.19 | 1.06 | 0.5 | 0.94 | -0.2 | 0.34 |
| I115M01 | 162 | 359 | 0.67 | 0.12 | 0.96 | -0.8 | 0.96 | -0.6 | 0.48 |
| I115M02 | 142 | 368 | 1 | 0.12 | 0.86 | -3 | 0.83 | -2.3 | 0.56 |
| I115M03 | 140 | 360 | 0.98 | 0.12 | 1.01 | 0.1 | 1 | 0 | 0.46 |
| I115M04 | 133 | 356 | 1.07 | 0.12 | 1.07 | 1.4 | 1.13 | 1.6 | 0.41 |
| I115M05 | 205 | 361 | 0.03 | 0.12 | 1.03 | 0.6 | 1.05 | 0.8 | 0.39 |
| I115M06 | 142 | 370 | 1.01 | 0.12 | 1.04 | 0.8 | 1.03 | 0.5 | 0.43 |
| I115M07 | 270 | 350 | -1.12 | 0.14 | 0.96 | -0.5 | 0.93 | -0.6 | 0.39 |
| I115M08 | 220 | 359 | -0.19 | 0.12 | 0.97 | -0.6 | 0.96 | -0.5 | 0.43 |
| I115M09 | 168 | 367 | 0.63 | 0.12 | 0.95 | -1.1 | 0.95 | -0.8 | 0.49 |
| I115M10 | 134 | 364 | 1.1 | 0.12 | 0.88 | -2.4 | 0.84 | -2.1 | 0.55 |
| I115M11 | 263 | 346 | -1.03 | 0.14 | 1.07 | 1 | 1.09 | 0.8 | 0.3 |
| I115M12 | 87 | 356 | 1.85 | 0.14 | 0.99 | -0.2 | 0.98 | -0.2 | 0.47 |
| I115M13 | 188 | 362 | 0.34 | 0.12 | 1.07 | 1.6 | 1.07 | 1 | 0.4 |
| I115M14 | 178 | 364 | 0.5 | 0.12 | 0.97 | -0.8 | 0.96 | -0.6 | 0.47 |
| I115M15 | 116 | 355 | 1.33 | 0.13 | 1.19 | 3.2 | 1.27 | 2.8 | 0.33 |
| A1151I | 182 | 205 | -2.92 | 0.25 | 1.04 | 0.3 | 1.17 | 0.7 | 0.38 |
| A1151II | 222 | 265 | -2.08 | 0.19 | 1.1 | 0.9 | 1.1 | 0.5 | 0.4 |
| A1152A | 233 | 339 | -0.58 | 0.14 | 1.02 | 0.3 | 0.94 | -0.5 | 0.5 |
| A1152B | 55 | 325 | 2.93 | 0.17 | 0.9 | -1 | 0.78 | -1.1 | 0.54 |
| A1152C | 29 | 289 | 3.83 | 0.21 | 1.06 | 0.4 | 1.09 | 0.4 | 0.43 |
| A1153A | 211 | 348 | -0.03 | 0.13 | 1.16 | 2.7 | 1.38 | 3.1 | 0.42 |
| A1153B | 188 | 344 | 0.34 | 0.13 | 1.15 | 2.7 | 1.22 | 2.2 | 0.43 |
| A1154A | 235 | 317 | -1.05 | 0.15 | 1.04 | 0.5 | 0.98 | -0.1 | 0.47 |
| A1154BI | 225 | 339 | -0.43 | 0.13 | 0.89 | -1.8 | 0.73 | -2.5 | 0.57 |
| A1154BII | 65 | 330 | 2.66 | 0.16 | 0.85 | -1.6 | 0.66 | -2.1 | 0.57 |



| ITEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|-----------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MNSQ | ZSTD | MNSQ | ZSTD | |
| A1154BIII | 187 | 344 | 0.35 | 0.13 | 0.91 | -1.7 | 0.85 | -1.6 | 0.56 |
| A1155AI | 218 | 339 | -0.3 | 0.13 | 0.93 | -1.2 | 0.89 | -1 | 0.54 |
| A1155AII | 199 | 348 | 0.16 | 0.13 | 0.92 | -1.4 | 0.87 | -1.2 | 0.55 |
| A1155BI | 215 | 339 | -0.25 | 0.13 | 1.13 | 2.1 | 1.19 | 1.7 | 0.44 |
| A1155BII | 84 | 342 | 2.23 | 0.15 | 1.09 | 1.2 | 1.06 | 0.4 | 0.46 |
| A1155BIII | 179 | 349 | 0.56 | 0.13 | 1.2 | 3.6 | 1.27 | 2.4 | 0.41 |
| A1156A | 139 | 349 | 1.2 | 0.13 | 0.98 | -0.4 | 0.93 | -0.6 | 0.53 |
| A1156B | 188 | 349 | 0.42 | 0.13 | 1.09 | 1.6 | 1.07 | 0.7 | 0.47 |
| C1151A | 217 | 348 | -0.14 | 0.13 | 0.92 | -1.4 | 0.92 | -0.7 | 0.55 |
| C1151B | 164 | 349 | 0.8 | 0.13 | 0.97 | -0.6 | 0.98 | -0.1 | 0.53 |
| C1152A | 238 | 306 | -1.37 | 0.16 | 0.96 | -0.4 | 0.95 | -0.3 | 0.5 |
| C1152B | 66 | 330 | 2.64 | 0.16 | 0.92 | -0.8 | 0.75 | -1.4 | 0.54 |
| C1153A | 166 | 349 | 0.76 | 0.13 | 0.92 | -1.5 | 0.82 | -1.8 | 0.56 |
| C1153B | 107 | 347 | 1.78 | 0.14 | 1.01 | 0.1 | 0.91 | -0.6 | 0.51 |
| C1154A | 185 | 344 | 0.39 | 0.13 | 0.94 | -1.2 | 0.88 | -1.2 | 0.54 |
| C1154B | 157 | 349 | 0.91 | 0.13 | 1.05 | 1 | 1.05 | 0.5 | 0.49 |
| C1154CI | 190 | 344 | 0.31 | 0.13 | 0.92 | -1.5 | 0.82 | -1.9 | 0.55 |
| C1154CII | 129 | 345 | 1.36 | 0.13 | 1.18 | 3 | 1.34 | 2.8 | 0.4 |
| C1155 | 240 | 306 | -1.42 | 0.16 | 1.16 | 1.6 | 1.36 | 2.1 | 0.38 |
| C1156A | 213 | 339 | -0.22 | 0.13 | 0.88 | -2 | 0.8 | -1.9 | 0.57 |
| C1156B | 125 | 347 | 1.46 | 0.13 | 0.93 | -1.1 | 0.83 | -1.5 | 0.55 |
| C1157A | 241 | 306 | -1.45 | 0.16 | 1 | 0 | 1.15 | 1 | 0.46 |
| C1157B | 192 | 348 | 0.28 | 0.13 | 0.89 | -2.2 | 0.84 | -1.6 | 0.57 |
| I036M01 | 74 | 285 | 1.85 | 0.15 | 1.1 | 1.3 | 1.14 | 1.1 | 0.43 |
| I036M02 | 73 | 77 | -5.05 | 0.54 | 0.96 | 0 | 0.95 | 0.1 | 0.29 |
| I036M03 | 196 | 316 | -0.38 | 0.14 | 1.1 | 1.6 | 1.1 | 0.9 | 0.49 |
| I036M04 | 246 | 277 | -2.71 | 0.22 | 0.91 | -0.6 | 0.45 | -2.3 | 0.5 |
| I036M05 | 196 | 321 | -0.31 | 0.13 | 1 | 0.1 | 0.95 | -0.4 | 0.54 |
| I036M06 | 205 | 313 | -0.57 | 0.14 | 0.92 | -1.1 | 0.87 | -1.1 | 0.58 |
| I036M07 | 109 | 313 | 1.19 | 0.14 | 1.04 | 0.6 | 1.03 | 0.3 | 0.51 |
| I036M08 | 121 | 313 | 0.98 | 0.13 | 0.95 | -0.8 | 1.03 | 0.3 | 0.55 |
| A36A | 239 | 275 | -1.7 | 0.2 | 1 | 0.1 | 0.95 | -0.1 | 0.38 |
| A36B | 243 | 310 | -0.79 | 0.16 | 0.98 | -0.2 | 0.75 | -1.2 | 0.48 |
| A36C | 207 | 310 | 0.02 | 0.14 | 0.8 | -3.1 | 0.66 | -2.8 | 0.62 |
| A36D | 153 | 323 | 1.27 | 0.14 | 1.06 | 0.9 | 1.1 | 0.9 | 0.53 |
| A36E | 100 | 316 | 2.28 | 0.14 | 0.95 | -0.7 | 0.83 | -1.2 | 0.59 |
| C361A | 239 | 276 | -1.68 | 0.19 | 0.98 | -0.1 | 1.15 | 0.6 | 0.37 |
| C361B | 138 | 147 | -3.31 | 0.36 | 0.86 | -0.4 | 0.49 | -1.4 | 0.32 |
| C361C | 252 | 310 | -1.02 | 0.17 | 0.89 | -1.2 | 0.83 | -0.7 | 0.49 |
| C362A | 168 | 323 | 0.99 | 0.13 | 1.07 | 1.2 | 1.23 | 1.9 | 0.51 |
| C362B | 210 | 237 | -2.09 | 0.22 | 1.04 | 0.3 | 1.29 | 1.1 | 0.27 |
| C363A | 226 | 310 | -0.39 | 0.15 | 1.05 | 0.7 | 0.98 | -0.1 | 0.46 |
| C363B | 38 | 264 | 3.94 | 0.2 | 0.89 | -0.9 | 0.64 | -1.6 | 0.57 |
| C364A | 207 | 310 | 0.02 | 0.14 | 0.95 | -0.7 | 0.96 | -0.3 | 0.53 |
| C364BI | 32 | 263 | 4.19 | 0.21 | 1.05 | 0.4 | 0.92 | -0.2 | 0.47 |
| C364BII | 196 | 323 | 0.48 | 0.14 | 1.32 | 4.6 | 1.32 | 2.2 | 0.39 |
| A46MA4 | 89 | 217 | 1.41 | 0.16 | 1.1 | 1.5 | 1.23 | 1.7 | 0.47 |
| C46MA5 | 50 | 193 | 2.47 | 0.18 | 1.05 | 0.6 | 1.03 | 0.3 | 0.48 |
| C46MA6 | 94 | 99 | -3.62 | 0.47 | 1.11 | 0.4 | 1.61 | 1.1 | 0.08 |
| C46MA7 | 152 | 218 | -0.23 | 0.17 | 0.97 | -0.3 | 0.9 | -0.7 | 0.53 |
| C46MA8 | 150 | 158 | -3.18 | 0.38 | 1 | 0.1 | 0.81 | -0.2 | 0.23 |
| A46MB4 | 43 | 98 | 0.45 | 0.23 | 0.99 | -0.1 | 0.97 | -0.2 | 0.48 |
| C46MB5 | 60 | 97 | -0.41 | 0.23 | 1.03 | 0.3 | 1.04 | 0.4 | 0.4 |
| C46MB6 | 72 | 83 | -2.24 | 0.34 | 1.01 | 0.1 | 1.09 | 0.4 | 0.23 |
| C46MB7 | 37 | 96 | 0.73 | 0.23 | 1.09 | 0.9 | 1.05 | 0.4 | 0.42 |
| C46MB8 | 77 | 83 | -2.96 | 0.44 | 1.04 | 0.2 | 0.78 | -0.3 | 0.2 |
| I56M01 | 42 | 328 | 3.07 | 0.18 | 0.86 | -1.2 | 0.65 | -1.8 | 0.49 |
| I56M02 | 163 | 336 | 0.77 | 0.12 | 1.03 | 0.7 | 1.07 | 0.9 | 0.44 |
| I56M03 | 241 | 322 | -0.71 | 0.14 | 1.08 | 1.1 | 1.09 | 0.8 | 0.36 |
| I56M04 | 263 | 323 | -1.2 | 0.16 | 1 | 0 | 1.05 | 0.4 | 0.39 |
| I56M05 | 251 | 322 | -0.94 | 0.15 | 0.99 | -0.1 | 1.01 | 0.1 | 0.42 |
| I56M06 | 158 | 327 | 0.79 | 0.12 | 0.96 | -0.8 | 0.96 | -0.5 | 0.49 |
| I56M07 | 80 | 330 | 2.13 | 0.14 | 1.13 | 1.7 | 1.21 | 1.5 | 0.33 |



| ITEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|----------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MNSQ | ZSTD | MNSQ | ZSTD | |
| I56M08 | 189 | 329 | 0.33 | 0.13 | 0.92 | -1.6 | 0.89 | -1.5 | 0.52 |
| A561A | 222 | 304 | -1.51 | 0.15 | 0.84 | -2.2 | 0.65 | -2.7 | 0.59 |
| A562A | 227 | 305 | -1.62 | 0.15 | 0.86 | -1.9 | 0.76 | -1.6 | 0.57 |
| A562B | 166 | 298 | -0.41 | 0.14 | 0.91 | -1.5 | 0.95 | -0.5 | 0.6 |
| A562C | 183 | 304 | -0.72 | 0.14 | 0.92 | -1.3 | 0.85 | -1.5 | 0.6 |
| A562D | 218 | 304 | -1.42 | 0.15 | 1.19 | 2.5 | 1.44 | 2.8 | 0.41 |
| C561AI | 263 | 305 | -2.63 | 0.19 | 0.96 | -0.3 | 0.78 | -0.8 | 0.45 |
| C561AII | 149 | 159 | -4.51 | 0.36 | 0.9 | -0.3 | 0.53 | -1.1 | 0.32 |
| C561AIII | 116 | 295 | 0.5 | 0.14 | 1.14 | 2.2 | 1.21 | 2.1 | 0.52 |
| C561B | 246 | 305 | -2.1 | 0.17 | 1.19 | 2 | 1.64 | 2.8 | 0.36 |
| C562 | 161 | 298 | -0.31 | 0.13 | 1.08 | 1.4 | 1.09 | 1.1 | 0.52 |
| C563AI | 120 | 128 | -4.74 | 0.4 | 0.86 | -0.4 | 0.59 | -0.8 | 0.31 |
| C563AII | 169 | 298 | -0.46 | 0.14 | 1.16 | 2.6 | 1.17 | 2 | 0.48 |
| C563C | 213 | 304 | -1.31 | 0.15 | 0.97 | -0.3 | 0.9 | -0.7 | 0.54 |
| I66M06 | 242 | 315 | -1 | 0.15 | 1.03 | 0.4 | 1.04 | 0.3 | 0.38 |
| I66M08 | 243 | 278 | -2.02 | 0.19 | 0.95 | -0.4 | 0.74 | -1.2 | 0.34 |
| I66M09 | 194 | 309 | -0.14 | 0.13 | 0.84 | -3.1 | 0.73 | -3 | 0.58 |
| I66M10 | 132 | 284 | 0.73 | 0.14 | 0.88 | -2 | 0.86 | -1.7 | 0.6 |
| A6611 | 161 | 171 | -2.35 | 0.33 | 0.93 | -0.2 | 0.49 | -1.5 | 0.24 |
| A6612 | 249 | 317 | 0.02 | 0.16 | 1.06 | 0.8 | 1.19 | 1 | 0.39 |
| A6613 | 182 | 317 | 1.36 | 0.13 | 1.07 | 1.1 | 1.02 | 0.2 | 0.51 |
| A6614 | 175 | 317 | 1.49 | 0.13 | 1.08 | 1.4 | 1.04 | 0.5 | 0.51 |
| A6621 | 243 | 317 | 0.16 | 0.15 | 0.8 | -2.8 | 0.63 | -2.3 | 0.56 |
| A6622 | 173 | 317 | 1.52 | 0.13 | 0.72 | -5.3 | 0.59 | -4.9 | 0.69 |
| C661A | 205 | 317 | 0.94 | 0.14 | 0.87 | -2.2 | 0.88 | -1 | 0.58 |
| C661B | 246 | 317 | 0.09 | 0.15 | 1 | 0 | 1.07 | 0.4 | 0.44 |
| C662C | 234 | 283 | -0.47 | 0.17 | 0.78 | -2.4 | 0.57 | -2.4 | 0.5 |
| C662D | 181 | 317 | 1.38 | 0.13 | 1.04 | 0.8 | 1.02 | 0.3 | 0.52 |
| C662F | 60 | 277 | 3.75 | 0.16 | 1.3 | 3.2 | 1.44 | 2.4 | 0.4 |
| C663A | 209 | 317 | 0.86 | 0.14 | 0.99 | -0.1 | 0.97 | -0.2 | 0.51 |
| C663B | 250 | 317 | 0 | 0.16 | 1.22 | 2.5 | 1.16 | 0.8 | 0.33 |
| C663C | 255 | 317 | -0.13 | 0.16 | 1.02 | 0.2 | 0.86 | -0.6 | 0.42 |
| C663D | 225 | 317 | 0.55 | 0.14 | 0.97 | -0.4 | 0.89 | -0.8 | 0.51 |
| C664A | 212 | 317 | 0.81 | 0.14 | 1.07 | 1.1 | 1 | 0 | 0.48 |
| C664B | 204 | 317 | 0.96 | 0.14 | 1 | 0 | 0.97 | -0.2 | 0.52 |
| C664C | 201 | 221 | -1.61 | 0.25 | 1.03 | 0.2 | 1.23 | 0.8 | 0.2 |
| C665 | 227 | 283 | -0.27 | 0.17 | 0.96 | -0.4 | 1.07 | 0.5 | 0.41 |



Confidence level items Rasch statistics

| TEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|------------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| CC35M01 | 412 | 264 | 0.59 | 0.1 | 1.05 | 0.5 | 1.05 | 0.5 | 0.55 |
| CC35M02 | 168 | 130 | 1.99 | 0.18 | 0.98 | 0 | 0.81 | -1 | 0.53 |
| CC35M03 | 301 | 221 | 1.33 | 0.12 | 1.08 | 0.7 | 0.89 | -0.8 | 0.53 |
| CC35M04 | 299 | 220 | 1.35 | 0.13 | 0.91 | -0.7 | 0.81 | -1.4 | 0.55 |
| CC35M05 | 440 | 257 | 0.25 | 0.09 | 0.76 | -2.8 | 0.76 | -2.6 | 0.65 |
| CA35M06 | 538 | 294 | -0.13 | 0.08 | 0.79 | -2.6 | 0.81 | -2.3 | 0.68 |
| CA35M07 | 431 | 259 | 0.34 | 0.09 | 0.87 | -1.4 | 0.87 | -1.3 | 0.62 |
| CA35M08 | 748 | 288 | -1.41 | 0.07 | 0.83 | -2.4 | 0.82 | -2.4 | 0.75 |
| CA45MA146 | 829 | 392 | -0.49 | 0.07 | 0.86 | -2.1 | 0.91 | -1.3 | 0.67 |
| CA45MA246 | 748 | 387 | -0.18 | 0.07 | 1.22 | 2.9 | 1.18 | 2.2 | 0.61 |
| CA45MA346 | 556 | 357 | 0.73 | 0.08 | 0.84 | -2 | 0.78 | -2.4 | 0.6 |
| CA45MA4 | 520 | 214 | -0.93 | 0.09 | 0.82 | -2.2 | 0.81 | -2.1 | 0.7 |
| CC45MA5 | 409 | 215 | -0.04 | 0.09 | 0.93 | -0.7 | 0.97 | -0.3 | 0.61 |
| CC45MA6 | 209 | 158 | 1.77 | 0.16 | 0.92 | -0.4 | 0.86 | -0.8 | 0.49 |
| CC45MA7 | 357 | 212 | 0.38 | 0.1 | 0.85 | -1.5 | 0.79 | -1.8 | 0.61 |
| CC45MA8 | 358 | 216 | 0.47 | 0.1 | 0.93 | -0.6 | 0.93 | -0.5 | 0.57 |
| CA45MB146 | 327 | 154 | -0.35 | 0.1 | 0.84 | -1.5 | 0.9 | -0.8 | 0.67 |
| CA45MB246 | 321 | 155 | -0.26 | 0.11 | 1.42 | 3.5 | 1.41 | 3.1 | 0.55 |
| CA45MB346 | 250 | 153 | 0.6 | 0.12 | 0.74 | -2.2 | 0.69 | -2.2 | 0.66 |
| CA45MB4 | 187 | 81 | -0.73 | 0.14 | 0.68 | -2.5 | 0.72 | -2 | 0.72 |
| CC45MB5 | 153 | 80 | -0.06 | 0.15 | 0.7 | -2.1 | 0.69 | -1.9 | 0.69 |
| CC45MB6 | 163 | 82 | -0.2 | 0.15 | 0.94 | -0.4 | 0.96 | -0.2 | 0.64 |
| CC45MB7 | 165 | 74 | -0.67 | 0.15 | 1.18 | 1.2 | 1.12 | 0.8 | 0.64 |
| CC45MB8 | 141 | 80 | 0.22 | 0.16 | 0.83 | -1.1 | 0.83 | -0.9 | 0.66 |
| CC55M01 | 464 | 262 | 0.21 | 0.09 | 0.88 | -1.4 | 0.96 | -0.3 | 0.64 |
| CC55M02 | 393 | 244 | 0.67 | 0.1 | 0.79 | -2.2 | 0.82 | -1.6 | 0.63 |
| CC55M03 | 536 | 253 | -0.43 | 0.08 | 1.25 | 2.8 | 1.21 | 2.2 | 0.65 |
| CC55M04 | 445 | 259 | 0.32 | 0.09 | 0.8 | -2.3 | 0.76 | -2.4 | 0.68 |
| CC55M05 | 386 | 237 | 0.62 | 0.1 | 0.95 | -0.4 | 0.92 | -0.6 | 0.62 |
| CA55M06 | 571 | 254 | -0.69 | 0.08 | 0.93 | -0.9 | 0.94 | -0.7 | 0.7 |
| CA55M07 | 467 | 255 | 0.09 | 0.09 | 1.03 | 0.4 | 0.91 | -0.8 | 0.67 |
| CA55M08 | 524 | 251 | -0.39 | 0.08 | 1.24 | 2.6 | 1.26 | 2.6 | 0.64 |
| CI65M0166 | 768 | 338 | -0.7 | 0.07 | 1.05 | 0.7 | 1.16 | 1.9 | 0.64 |
| CI65M0266 | 773 | 334 | -0.76 | 0.07 | 1.11 | 1.6 | 1.16 | 1.9 | 0.65 |
| CI65M0366 | 502 | 320 | 0.76 | 0.09 | 1.54 | 5.2 | 1.45 | 3.8 | 0.51 |
| CI65M0466 | 578 | 320 | 0.15 | 0.08 | 0.97 | -0.3 | 1.07 | 0.8 | 0.59 |
| CI65M0566 | 654 | 329 | -0.2 | 0.07 | 1.06 | 0.8 | 1.04 | 0.5 | 0.63 |
| CI65M06 | 280 | 187 | 1.03 | 0.12 | 0.95 | -0.4 | 0.85 | -1 | 0.59 |
| CI65M0766 | 518 | 321 | 0.62 | 0.09 | 0.76 | -3 | 0.76 | -2.5 | 0.64 |
| CI65M08 | 324 | 194 | 0.55 | 0.11 | 0.9 | -0.9 | 0.9 | -0.8 | 0.62 |
| CI65M09 | 433 | 193 | -0.6 | 0.09 | 1.08 | 0.9 | 1.07 | 0.7 | 0.64 |
| CI65M10 | 396 | 192 | -0.25 | 0.1 | 1.06 | 0.6 | 1.12 | 1.1 | 0.62 |
| CI65M1166 | 649 | 312 | -0.34 | 0.07 | 1.24 | 3 | 1.14 | 1.6 | 0.64 |
| CI65M1266 | 746 | 302 | -1.03 | 0.07 | 1.34 | 4.2 | 1.3 | 3.4 | 0.66 |
| CA651A663 | 350 | 186 | -0.05 | 0.1 | 1.09 | 0.9 | 1.1 | 0.9 | 0.59 |
| CA651B | 267 | 118 | -0.64 | 0.12 | 1.34 | 2.6 | 1.28 | 2 | 0.59 |
| CA652A | 230 | 128 | 0.21 | 0.13 | 1.1 | 0.8 | 1.1 | 0.7 | 0.56 |
| CA652B561B | 465 | 224 | -0.36 | 0.09 | 0.91 | -1.1 | 0.85 | -1.5 | 0.65 |
| CA653 | 235 | 131 | 0.21 | 0.12 | 0.92 | -0.6 | 1.01 | 0.1 | 0.57 |



| TEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|------------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| CC651A662A | 334 | 205 | 0.53 | 0.11 | 0.7 | -3.1 | 0.76 | -2.1 | 0.6 |
| CC651B662B | 331 | 189 | 0.26 | 0.11 | 0.7 | -3.1 | 0.69 | -2.8 | 0.61 |
| CC651C | 233 | 127 | 0.12 | 0.12 | 0.68 | -2.8 | 0.65 | -2.6 | 0.65 |
| CC651D662E | 337 | 181 | 0.02 | 0.1 | 0.81 | -1.9 | 0.79 | -1.9 | 0.62 |
| CC651E662G | 345 | 176 | -0.18 | 0.1 | 0.68 | -3.5 | 0.69 | -2.9 | 0.67 |
| CC652A | 196 | 119 | 0.57 | 0.14 | 0.68 | -2.5 | 0.65 | -2.4 | 0.62 |
| CC652B | 216 | 122 | 0.31 | 0.13 | 0.75 | -2 | 0.71 | -2 | 0.63 |
| CC652C | 214 | 120 | 0.28 | 0.13 | 0.72 | -2.3 | 0.7 | -2.1 | 0.63 |
| CC652D | 249 | 107 | -0.7 | 0.13 | 0.85 | -1.2 | 0.86 | -1 | 0.68 |
| CC653A | 175 | 115 | 0.94 | 0.15 | 0.87 | -0.8 | 0.76 | -1.4 | 0.57 |
| CC653B | 230 | 118 | -0.04 | 0.13 | 1.02 | 0.2 | 1.11 | 0.8 | 0.59 |
| CC654 | 208 | 107 | -0.04 | 0.13 | 1.28 | 1.9 | 1.26 | 1.6 | 0.54 |
| CA85M0184 | 1373 | 572 | -0.71 | 0.05 | 1.09 | 1.7 | 1.2 | 3.2 | 0.62 |
| CA85M0284 | 1344 | 570 | -0.65 | 0.05 | 1.12 | 2.1 | 1.08 | 1.3 | 0.66 |
| CA85M0384 | 1256 | 564 | -0.43 | 0.05 | 1.2 | 3.5 | 1.14 | 2.2 | 0.66 |
| CA85M0484 | 1119 | 568 | 0.01 | 0.06 | 1.11 | 1.9 | 1.07 | 1 | 0.63 |
| CA85M0584 | 807 | 546 | 1.16 | 0.07 | 1.44 | 5.3 | 1.13 | 1.4 | 0.56 |
| CC85M0684 | 1409 | 567 | -0.83 | 0.05 | 1.22 | 3.9 | 1.32 | 4.9 | 0.58 |
| CC85M0784 | 1043 | 567 | 0.28 | 0.06 | 1.01 | 0.2 | 0.97 | -0.4 | 0.64 |
| CC85M0884 | 1196 | 568 | -0.22 | 0.06 | 1.06 | 1.1 | 1.07 | 1 | 0.64 |
| CC85M0984 | 1037 | 562 | 0.25 | 0.06 | 1.08 | 1.2 | 1.03 | 0.4 | 0.63 |
| CC85M1084 | 1355 | 562 | -0.73 | 0.05 | 1.2 | 3.5 | 1.14 | 2.3 | 0.67 |
| CI95M01 | 420 | 205 | -0.11 | 0.09 | 1.6 | 5.5 | 1.55 | 4.6 | 0.54 |
| CI95M02 | 353 | 206 | 0.54 | 0.1 | 1.19 | 1.8 | 1.08 | 0.7 | 0.58 |
| CI95M03 | 469 | 206 | -0.51 | 0.09 | 0.8 | -2.4 | 0.86 | -1.5 | 0.67 |
| CI95M04 | 385 | 205 | 0.19 | 0.1 | 1.09 | 0.9 | 1.01 | 0.2 | 0.61 |
| CI95M05 | 511 | 196 | -1.02 | 0.09 | 1.34 | 3.4 | 1.36 | 3.3 | 0.6 |
| CI95M06 | 469 | 203 | -0.56 | 0.09 | 1.27 | 2.8 | 1.25 | 2.3 | 0.6 |
| CI95M07 | 510 | 203 | -0.87 | 0.09 | 1 | 0 | 1.02 | 0.3 | 0.64 |
| CI95M08 | 489 | 199 | -0.79 | 0.09 | 1.22 | 2.4 | 1.21 | 2.1 | 0.61 |
| CA951 | 327 | 145 | -0.52 | 0.11 | 1.06 | 0.6 | 1.13 | 1.1 | 0.64 |
| CA952A | 359 | 157 | -0.6 | 0.1 | 0.8 | -2.1 | 0.78 | -2 | 0.67 |
| CA952B | 364 | 156 | -0.65 | 0.1 | 0.86 | -1.4 | 0.92 | -0.7 | 0.65 |
| CA952C | 354 | 142 | -0.87 | 0.11 | 0.92 | -0.7 | 0.91 | -0.7 | 0.65 |
| CA952D | 344 | 137 | -0.9 | 0.11 | 1.05 | 0.5 | 1.05 | 0.5 | 0.64 |
| CA953A | 279 | 148 | 0.13 | 0.11 | 1.01 | 0.2 | 0.93 | -0.5 | 0.64 |
| CA953B | 270 | 147 | 0.24 | 0.12 | 0.81 | -1.7 | 0.74 | -2.1 | 0.68 |
| CA953C | 307 | 138 | -0.46 | 0.11 | 0.9 | -0.9 | 0.86 | -1.1 | 0.67 |
| CC951 | 298 | 152 | 0.02 | 0.11 | 0.74 | -2.5 | 0.89 | -0.8 | 0.67 |
| CC952 | 321 | 154 | -0.21 | 0.11 | 0.68 | -3.3 | 0.66 | -3.1 | 0.7 |
| CC953A | 230 | 151 | 0.99 | 0.13 | 1.11 | 0.8 | 1.02 | 0.2 | 0.61 |
| CC953B | 270 | 146 | 0.26 | 0.12 | 1.01 | 0.2 | 0.92 | -0.5 | 0.66 |
| CC953CI | 243 | 148 | 0.68 | 0.13 | 1.02 | 0.2 | 0.91 | -0.5 | 0.64 |
| CC953CII | 268 | 134 | -0.08 | 0.12 | 0.97 | -0.2 | 0.92 | -0.6 | 0.65 |
| CC953D | 267 | 139 | 0.09 | 0.12 | 0.98 | -0.2 | 0.91 | -0.6 | 0.66 |
| CC954 | 278 | 152 | 0.24 | 0.11 | 0.85 | -1.3 | 0.79 | -1.6 | 0.67 |
| CC955 | 204 | 134 | 0.97 | 0.14 | 1.16 | 1.1 | 0.94 | -0.3 | 0.63 |
| CI115M01 | 346 | 174 | 0.01 | 0.1 | 1.38 | 3.3 | 1.28 | 2.3 | 0.52 |
| CI115M02 | 320 | 172 | 0.25 | 0.1 | 0.99 | 0 | 1.17 | 1.4 | 0.52 |
| CI115M03 | 358 | 169 | -0.21 | 0.1 | 1.3 | 2.7 | 1.28 | 2.4 | 0.51 |
| CI115M04 | 431 | 163 | -1.02 | 0.1 | 1.36 | 3.3 | 1.37 | 3.1 | 0.55 |
| CI115M05 | 350 | 172 | -0.09 | 0.1 | 1 | 0 | 0.96 | -0.3 | 0.59 |
| CI115M06 | 401 | 175 | -0.52 | 0.09 | 1.05 | 0.6 | 1.17 | 1.6 | 0.52 |



| TEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|------------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| CI115M07 | 335 | 175 | 0.11 | 0.1 | 1.02 | 0.2 | 1.02 | 0.2 | 0.56 |
| CI115M08 | 345 | 172 | -0.05 | 0.1 | 1.18 | 1.7 | 1.2 | 1.7 | 0.53 |
| CI115M09 | 386 | 171 | -0.47 | 0.1 | 1.14 | 1.4 | 1.08 | 0.8 | 0.57 |
| CI115M10 | 352 | 166 | -0.22 | 0.1 | 1.04 | 0.4 | 1.01 | 0.1 | 0.58 |
| CI115M11 | 327 | 171 | 0.14 | 0.1 | 1.35 | 3 | 1.47 | 3.6 | 0.5 |
| CI115M12 | 380 | 166 | -0.51 | 0.1 | 1.3 | 2.9 | 1.24 | 2.2 | 0.53 |
| CI115M13 | 308 | 163 | 0.19 | 0.11 | 1.26 | 2.2 | 1.15 | 1.2 | 0.55 |
| CI115M14 | 342 | 162 | -0.21 | 0.1 | 1.17 | 1.6 | 1.13 | 1.1 | 0.54 |
| CI115M15 | 425 | 161 | -1.04 | 0.1 | 1.22 | 2.1 | 1.24 | 2.2 | 0.54 |
| CA1151I | 231 | 131 | 0.38 | 0.12 | 1.15 | 1.1 | 1.14 | 1 | 0.55 |
| CA1151II | 248 | 131 | 0.12 | 0.12 | 0.76 | -2.1 | 0.77 | -1.8 | 0.63 |
| CA1152A | 241 | 122 | -0.01 | 0.12 | 1.2 | 1.6 | 1.14 | 1 | 0.57 |
| CA1152B | 271 | 115 | -0.68 | 0.12 | 1.11 | 1 | 1.13 | 1 | 0.59 |
| CA1152C | 277 | 114 | -0.84 | 0.12 | 0.78 | -2 | 0.79 | -1.8 | 0.65 |
| CA1153A | 237 | 116 | -0.16 | 0.12 | 0.91 | -0.7 | 0.91 | -0.7 | 0.6 |
| CA1153B | 245 | 112 | -0.41 | 0.12 | 0.81 | -1.6 | 0.82 | -1.4 | 0.63 |
| CA1154A | 236 | 119 | -0.05 | 0.12 | 0.89 | -0.9 | 0.87 | -0.9 | 0.61 |
| CA1154BI | 240 | 107 | -0.5 | 0.12 | 0.73 | -2.4 | 0.75 | -2 | 0.66 |
| CA1154BII | 237 | 101 | -0.65 | 0.12 | 1.01 | 0.1 | 1 | 0.1 | 0.62 |
| CA1154BIII | 242 | 100 | -0.77 | 0.13 | 0.98 | -0.1 | 0.92 | -0.6 | 0.64 |
| CA1155AI | 227 | 111 | -0.17 | 0.12 | 1.45 | 3.2 | 1.38 | 2.5 | 0.54 |
| CA1155AII | 188 | 98 | 0.07 | 0.14 | 1.25 | 1.7 | 1.24 | 1.5 | 0.59 |
| CA1155BI | 213 | 103 | -0.21 | 0.13 | 0.87 | -1 | 0.82 | -1.3 | 0.64 |
| CA1155BII | 235 | 99 | -0.72 | 0.13 | 0.79 | -1.7 | 0.76 | -1.9 | 0.68 |
| CA1155BIII | 208 | 97 | -0.35 | 0.13 | 0.99 | 0 | 0.88 | -0.8 | 0.64 |
| CA1156A | 245 | 103 | -0.69 | 0.12 | 1.02 | 0.2 | 0.97 | -0.1 | 0.63 |
| CA1156B | 210 | 100 | -0.26 | 0.13 | 0.69 | -2.6 | 0.66 | -2.5 | 0.68 |
| CC1151A | 227 | 116 | 0.06 | 0.12 | 0.9 | -0.8 | 0.96 | -0.3 | 0.61 |
| CC1151B | 243 | 118 | -0.14 | 0.12 | 0.87 | -1 | 1.08 | 0.6 | 0.59 |
| CC1152A | 226 | 120 | 0.16 | 0.12 | 0.88 | -0.9 | 0.86 | -1 | 0.63 |
| CC1152B | 267 | 114 | -0.62 | 0.12 | 0.99 | 0 | 0.97 | -0.2 | 0.6 |
| CC1153A | 233 | 110 | -0.21 | 0.12 | 0.91 | -0.7 | 0.9 | -0.7 | 0.62 |
| CC1153B | 255 | 102 | -0.78 | 0.12 | 1.09 | 0.8 | 1.19 | 1.4 | 0.58 |
| CC1154A | 229 | 108 | -0.26 | 0.12 | 0.97 | -0.2 | 0.89 | -0.7 | 0.62 |
| CC1154B | 230 | 109 | -0.26 | 0.12 | 0.95 | -0.3 | 0.93 | -0.5 | 0.63 |
| CC1154CI | 263 | 113 | -0.6 | 0.12 | 0.72 | -2.5 | 0.75 | -2.1 | 0.66 |
| CC1154CII | 244 | 105 | -0.61 | 0.12 | 0.99 | 0 | 1.04 | 0.3 | 0.59 |
| CC1155 | 228 | 113 | -0.1 | 0.12 | 0.91 | -0.7 | 1.06 | 0.5 | 0.6 |
| CC1156A | 227 | 108 | -0.29 | 0.12 | 0.71 | -2.5 | 0.76 | -1.8 | 0.66 |
| CC1156B | 232 | 100 | -0.61 | 0.13 | 1.12 | 1 | 1.09 | 0.7 | 0.59 |
| CC1157A | 181 | 104 | 0.39 | 0.14 | 1.06 | 0.5 | 0.92 | -0.4 | 0.62 |
| CC1157B | 196 | 92 | -0.31 | 0.13 | 0.93 | -0.5 | 0.89 | -0.7 | 0.64 |
| CI036M01 | 382 | 220 | 0.26 | 0.1 | 1.03 | 0.3 | 1.14 | 1.2 | 0.51 |
| CI036M02 | 165 | 130 | 2.07 | 0.18 | 1.06 | 0.4 | 0.98 | 0 | 0.33 |
| CI036M03 | 373 | 218 | 0.31 | 0.1 | 0.85 | -1.6 | 0.84 | -1.4 | 0.58 |
| CI036M04 | 240 | 180 | 1.57 | 0.14 | 0.9 | -0.7 | 0.78 | -1.4 | 0.47 |
| CI036M05 | 363 | 221 | 0.46 | 0.1 | 0.71 | -3.1 | 0.72 | -2.6 | 0.61 |
| CI036M06 | 461 | 228 | -0.34 | 0.09 | 1.21 | 2.2 | 1.27 | 2.5 | 0.56 |
| CI036M07 | 510 | 233 | -0.65 | 0.08 | 0.92 | -0.9 | 0.96 | -0.4 | 0.66 |
| CI036M08 | 393 | 224 | 0.2 | 0.1 | 1.03 | 0.3 | 0.95 | -0.4 | 0.54 |
| CA36A | 192 | 128 | 0.89 | 0.14 | 1.28 | 1.8 | 1.08 | 0.5 | 0.41 |
| CA36B | 275 | 140 | -0.27 | 0.11 | 0.89 | -0.9 | 0.86 | -1.1 | 0.61 |
| CA36C | 280 | 124 | -0.84 | 0.12 | 0.67 | -3.2 | 0.68 | -2.8 | 0.73 |



| TEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|-----------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| CA36D | 272 | 115 | -1 | 0.12 | 0.87 | -1.1 | 0.82 | -1.4 | 0.72 |
| CA36E | 239 | 105 | -0.87 | 0.13 | 0.64 | -3.2 | 0.62 | -3 | 0.75 |
| CC361A | 220 | 150 | 0.93 | 0.14 | 0.9 | -0.7 | 0.9 | -0.6 | 0.39 |
| CC361B | 97 | 79 | 2.28 | 0.25 | 0.98 | 0 | 0.78 | -0.8 | 0.3 |
| CC361C | 227 | 144 | 0.66 | 0.13 | 1.11 | 0.8 | 1.07 | 0.5 | 0.46 |
| CC362A | 260 | 143 | 0.01 | 0.12 | 1.18 | 1.5 | 1.25 | 1.8 | 0.5 |
| CC362B | 260 | 150 | 0.22 | 0.12 | 0.89 | -0.9 | 1 | 0.1 | 0.49 |
| CC363A | 226 | 142 | 0.56 | 0.13 | 1.02 | 0.2 | 1.05 | 0.4 | 0.41 |
| CC363B | 281 | 120 | -1.04 | 0.12 | 0.93 | -0.6 | 0.92 | -0.6 | 0.67 |
| CC364A | 202 | 131 | 0.7 | 0.14 | 0.88 | -0.8 | 0.85 | -1 | 0.45 |
| CC364BI | 308 | 141 | -0.65 | 0.11 | 0.8 | -1.9 | 0.78 | -1.9 | 0.67 |
| CC364BII | 252 | 124 | -0.41 | 0.12 | 0.91 | -0.7 | 0.94 | -0.4 | 0.62 |
| CA46MA4 | 402 | 171 | -0.98 | 0.1 | 0.88 | -1.2 | 0.91 | -0.9 | 0.72 |
| CC46MA5 | 299 | 170 | 0.05 | 0.11 | 0.77 | -2.2 | 0.79 | -1.7 | 0.66 |
| CC46MA6 | 303 | 171 | 0.03 | 0.11 | 0.88 | -1.1 | 0.88 | -1 | 0.64 |
| CC46MA7 | 275 | 173 | 0.43 | 0.12 | 0.85 | -1.3 | 0.83 | -1.2 | 0.62 |
| CC46MA8 | 228 | 148 | 0.7 | 0.13 | 0.81 | -1.5 | 0.8 | -1.4 | 0.58 |
| CA46MB4 | 182 | 73 | -0.89 | 0.15 | 0.77 | -1.6 | 0.72 | -1.9 | 0.77 |
| CC46MB5 | 152 | 71 | -0.31 | 0.16 | 0.98 | -0.1 | 1.2 | 1.1 | 0.64 |
| CC46MB6 | 87 | 65 | 1.69 | 0.24 | 1.16 | 0.7 | 0.77 | -0.8 | 0.46 |
| CC46MB7 | 146 | 73 | -0.05 | 0.16 | 0.87 | -0.8 | 0.78 | -1.3 | 0.68 |
| CC46MB8 | 121 | 72 | 0.6 | 0.18 | 0.9 | -0.5 | 0.81 | -0.8 | 0.61 |
| CI56M01 | 340 | 171 | -0.16 | 0.1 | 0.99 | 0 | 1.15 | 1.2 | 0.67 |
| CI56M02 | 290 | 168 | 0.39 | 0.12 | 0.97 | -0.2 | 0.91 | -0.6 | 0.65 |
| CI56M03 | 288 | 165 | 0.33 | 0.11 | 1.19 | 1.6 | 1.04 | 0.4 | 0.63 |
| CI56M04 | 296 | 167 | 0.27 | 0.11 | 0.95 | -0.4 | 0.99 | 0 | 0.65 |
| CI56M05 | 261 | 163 | 0.71 | 0.12 | 1 | 0.1 | 0.92 | -0.5 | 0.64 |
| CI56M06 | 357 | 163 | -0.54 | 0.1 | 1.25 | 2.2 | 1.38 | 3 | 0.65 |
| CI56M07 | 309 | 166 | 0.07 | 0.11 | 0.85 | -1.4 | 0.83 | -1.3 | 0.7 |
| CI56M08 | 279 | 168 | 0.55 | 0.12 | 0.89 | -0.9 | 0.87 | -0.9 | 0.66 |
| CA561A | 198 | 98 | -0.27 | 0.13 | 0.93 | -0.5 | 0.88 | -0.7 | 0.66 |
| CA562A | 209 | 106 | -0.15 | 0.13 | 0.88 | -0.9 | 0.94 | -0.4 | 0.63 |
| CA562B | 192 | 96 | -0.25 | 0.14 | 0.74 | -2.1 | 0.71 | -2 | 0.67 |
| CA562C | 202 | 94 | -0.47 | 0.13 | 0.87 | -1 | 0.84 | -1.1 | 0.67 |
| CA562D | 181 | 89 | -0.37 | 0.14 | 1.35 | 2.3 | 1.28 | 1.7 | 0.59 |
| CC561AI | 187 | 107 | 0.32 | 0.14 | 0.71 | -2.2 | 0.72 | -1.9 | 0.61 |
| CC561AII | 164 | 103 | 0.66 | 0.15 | 1.03 | 0.3 | 0.98 | 0 | 0.52 |
| CC561AIII | 190 | 93 | -0.28 | 0.14 | 1.1 | 0.8 | 1.04 | 0.3 | 0.59 |
| CC561B | 172 | 102 | 0.43 | 0.15 | 0.83 | -1.1 | 0.75 | -1.5 | 0.6 |
| CC562 | 203 | 93 | -0.53 | 0.13 | 0.92 | -0.6 | 0.93 | -0.4 | 0.67 |
| CC563AI | 120 | 89 | 1.61 | 0.21 | 1.22 | 1.1 | 1.22 | 1 | 0.46 |
| CC563AII | 195 | 91 | -0.53 | 0.14 | 0.94 | -0.4 | 1.14 | 0.9 | 0.61 |
| CC563C | 173 | 86 | -0.33 | 0.14 | 0.92 | -0.5 | 1.15 | 0.9 | 0.59 |
| CI66M06 | 234 | 125 | -0.07 | 0.12 | 0.87 | -1 | 1.33 | 2.1 | 0.59 |
| CI66M08 | 215 | 121 | 0.16 | 0.13 | 1.15 | 1.1 | 0.97 | -0.1 | 0.59 |
| CI66M09 | 256 | 129 | -0.36 | 0.12 | 0.79 | -1.8 | 0.76 | -1.8 | 0.69 |
| CI66M10 | 284 | 116 | -1.15 | 0.12 | 1.4 | 3 | 1.39 | 2.6 | 0.67 |
| CA6611 | 114 | 69 | 0.44 | 0.18 | 1.15 | 0.8 | 0.98 | 0 | 0.58 |
| CA6612 | 117 | 61 | -0.22 | 0.18 | 1.04 | 0.3 | 1.09 | 0.5 | 0.55 |
| CA6613 | 124 | 61 | -0.52 | 0.17 | 1.09 | 0.6 | 1.01 | 0.1 | 0.62 |
| CA6614 | 97 | 56 | 0.13 | 0.2 | 0.89 | -0.5 | 0.77 | -1 | 0.64 |
| CA6621 | 97 | 60 | 0.52 | 0.2 | 0.83 | -0.8 | 0.87 | -0.5 | 0.67 |
| CA6622 | 89 | 51 | 0 | 0.21 | 0.92 | -0.3 | 0.96 | -0.1 | 0.59 |



| TEM | RAW SCORE | COUNT | MEASURE | MODEL S.E. | INFIT | | OUTFIT | | PTMEA CORR. |
|--------|-----------|-------|---------|------------|-------|------|--------|------|-------------|
| | | | | | MnSQ | ZSTD | MnSQ | ZSTD | |
| CC661A | 101 | 65 | 0.62 | 0.2 | 0.77 | -1.2 | 0.79 | -0.9 | 0.61 |
| CC661B | 95 | 62 | 0.75 | 0.21 | 1 | 0.1 | 0.87 | -0.4 | 0.59 |
| CC662C | 114 | 59 | -0.2 | 0.18 | 0.69 | -1.8 | 0.64 | -2 | 0.67 |
| CC662D | 110 | 57 | -0.2 | 0.18 | 0.59 | -2.6 | 0.59 | -2.3 | 0.68 |
| CC662F | 105 | 56 | -0.15 | 0.19 | 0.77 | -1.2 | 0.7 | -1.5 | 0.63 |
| CC663A | 85 | 51 | 0.51 | 0.21 | 1.11 | 0.6 | 0.9 | -0.3 | 0.59 |
| CC663B | 80 | 51 | 0.71 | 0.23 | 0.98 | 0 | 0.8 | -0.7 | 0.61 |
| CC663C | 83 | 50 | 0.29 | 0.22 | 0.8 | -0.9 | 0.84 | -0.6 | 0.63 |
| CC663D | 94 | 53 | 0.08 | 0.2 | 0.57 | -2.4 | 0.53 | -2.3 | 0.66 |
| CC664A | 103 | 58 | 0.24 | 0.19 | 0.88 | -0.6 | 0.87 | -0.5 | 0.62 |
| CC664B | 73 | 53 | 1.39 | 0.26 | 0.9 | -0.3 | 0.9 | -0.2 | 0.54 |
| CC664C | 79 | 55 | 1.16 | 0.24 | 1.1 | 0.5 | 1.19 | 0.7 | 0.51 |
| CC665 | 61 | 47 | 1.79 | 0.3 | 1.24 | 0.9 | 1.07 | 0.3 | 0.51 |

Item analysis data

| Item | Diff | Adapted discrimination | Adapted confidence deviation | Adapted expert opinion deviation | QI_3 | Component | Good/poor) |
|----------|-------|------------------------|------------------------------|----------------------------------|-------|-----------|------------|
| A6622 | 1.52 | 0.048 | 0.495 | 0.251 | 0.069 | 4 | 1 |
| A35M06 | 0.26 | 0.192 | 0.271 | 0.267 | 0.076 | 1 | 1 |
| A651B | 2.97 | 0.213 | 0.291 | 0.240 | 0.079 | 1 | 1 |
| C1151A | -0.14 | 0.336 | 0.244 | 0.285 | 0.107 | 3 | 1 |
| A55M06 | 4.56 | -0.035 | 0.537 | 0.550 | 0.112 | 1 | 1 |
| A651A | 1.1 | 0.295 | 0.385 | 0.236 | 0.119 | 1 | 1 |
| C1157B | 0.28 | 0.295 | 0.398 | 0.239 | 0.123 | 3 | 1 |
| C85M0884 | 1.08 | 0.378 | 0.258 | 0.299 | 0.125 | 3 | 1 |
| C1152B | 2.64 | 0.357 | 0.247 | 0.342 | 0.128 | 2 | 1 |
| C1151B | 0.8 | 0.378 | 0.266 | 0.329 | 0.135 | 2 | 1 |
| I65M09 | 1.72 | 0.110 | 0.351 | 0.608 | 0.138 | 3 | 1 |
| A1152B | 2.93 | 0.357 | 0.255 | 0.373 | 0.138 | 3 | 1 |
| A45MB146 | 0.34 | 0.275 | 0.416 | 0.301 | 0.140 | 2 | 1 |
| A36E | 2.28 | 0.254 | 0.447 | 0.303 | 0.141 | 2 | 1 |
| C651C | 0.27 | 0.378 | 0.360 | 0.268 | 0.144 | 1 | 1 |
| A953C | 2 | 0.295 | 0.249 | 0.492 | 0.148 | 2 | 1 |
| C1152A | -1.37 | 0.439 | 0.352 | 0.272 | 0.160 | 6 | 1 |
| A95M01 | -0.61 | 0.357 | 0.412 | 0.303 | 0.164 | 3 | 1 |
| A35M08 | 2.25 | 0.069 | 0.842 | 0.355 | 0.165 | 2 | 1 |
| C662D | 1.38 | 0.398 | 0.326 | 0.351 | 0.166 | 3 | 1 |
| C363B | 3.94 | 0.295 | 0.274 | 0.574 | 0.177 | 2 | 1 |
| A652B | 2.81 | 0.295 | 0.465 | 0.360 | 0.178 | 5 | 1 |
| A36M06 | -0.57 | 0.275 | 0.570 | 0.307 | 0.180 | 2 | 1 |
| I65M10 | 1.73 | 0.213 | 0.352 | 0.609 | 0.181 | 6 | 1 |
| C95M08 | 1.52 | 0.233 | 0.524 | 0.398 | 0.183 | 3 | 1 |
| C951 | 0.86 | 0.419 | 0.392 | 0.323 | 0.185 | 7 | 1 |
| I65M0466 | 0.14 | 0.522 | 0.358 | 0.280 | 0.188 | 6 | 1 |
| C36M03 | -0.38 | 0.460 | 0.381 | 0.311 | 0.189 | 3 | 1 |
| A562B | -0.41 | 0.233 | 0.477 | 0.461 | 0.190 | 3 | 1 |
| A1154BII | 2.66 | 0.295 | 0.229 | 0.713 | 0.191 | 1 | 1 |
| C115M02 | 1 | 0.316 | 0.583 | 0.286 | 0.191 | 3 | 1 |
| C652D | 2.81 | 0.233 | 0.230 | 0.843 | 0.192 | 2 | 1 |
| C36M05 | -0.31 | 0.357 | 0.502 | 0.314 | 0.195 | 7 | 1 |
| A6613 | 1.36 | 0.419 | 0.357 | 0.390 | 0.196 | 1 | 1 |
| A45MA146 | 0.2 | 0.357 | 0.542 | 0.290 | 0.197 | 2 | 1 |
| C115M01 | 0.67 | 0.481 | 0.352 | 0.343 | 0.197 | 1 | 1 |
| C66M09 | -0.14 | 0.275 | 0.508 | 0.406 | 0.198 | 7 | 1 |
| A45MB246 | 0.25 | 0.316 | 0.367 | 0.501 | 0.198 | 3 | 1 |
| A36M07 | 1.19 | 0.419 | 0.481 | 0.289 | 0.200 | 2 | 1 |
| C45MA7 | 0.13 | 0.275 | 0.523 | 0.402 | 0.201 | 3 | 1 |
| C953D | 0.13 | 0.336 | 0.313 | 0.557 | 0.202 | 7 | 1 |
| A953A | -1.04 | 0.604 | 0.315 | 0.308 | 0.205 | 2 | 1 |
| C45MA5 | -0.7 | 0.481 | 0.377 | 0.346 | 0.207 | 2 | 1 |



| | | | | | | | |
|-----------|-------|-------|-------|-------|-------|---|---|
| A45MA4 | 1.11 | 0.275 | 0.698 | 0.296 | 0.207 | 7 | 1 |
| C651D662E | 0.1 | 0.481 | 0.257 | 0.487 | 0.209 | 2 | 1 |
| C561AIII | 0.5 | 0.398 | 0.337 | 0.476 | 0.210 | 2 | 1 |
| C954 | -1.2 | 0.522 | 0.264 | 0.449 | 0.212 | 3 | 1 |
| A45MB4 | 1.56 | 0.522 | 0.473 | 0.247 | 0.213 | 1 | 1 |
| C1154A | 0.39 | 0.357 | 0.342 | 0.537 | 0.215 | 3 | 1 |
| C1157A | -1.45 | 0.522 | 0.249 | 0.483 | 0.218 | 3 | 1 |
| C55M03 | 0.9 | 0.563 | 0.374 | 0.318 | 0.221 | 2 | 1 |
| A36M08 | 0.98 | 0.336 | 0.544 | 0.371 | 0.221 | 1 | 1 |
| C561AI | -2.63 | 0.543 | 0.460 | 0.262 | 0.222 | 2 | 1 |
| C35M05 | -0.32 | 0.625 | 0.349 | 0.304 | 0.223 | 2 | 1 |
| C56M06 | 0.79 | 0.460 | 0.473 | 0.324 | 0.225 | 7 | 1 |
| A953B | -1.22 | 0.378 | 0.267 | 0.655 | 0.227 | 2 | 1 |
| C651B662B | -0.33 | 0.543 | 0.354 | 0.371 | 0.227 | 3 | 1 |
| C1153B | 1.78 | 0.419 | 0.470 | 0.369 | 0.228 | 2 | 1 |
| A95M03 | 0.84 | 0.357 | 0.443 | 0.460 | 0.228 | 5 | 1 |
| A95M04 | -0.3 | 0.522 | 0.309 | 0.449 | 0.231 | 2 | 1 |
| C45MB8 | -1.94 | 0.604 | 0.410 | 0.284 | 0.232 | 3 | 1 |
| C1154B | 0.91 | 0.460 | 0.250 | 0.593 | 0.232 | 3 | 1 |
| A85M0484 | 0.41 | 0.378 | 0.305 | 0.623 | 0.234 | 6 | 1 |
| C651E662G | 0.8 | 0.378 | 0.238 | 0.736 | 0.235 | 3 | 1 |
| A55M07 | -0.76 | 0.790 | 0.294 | 0.290 | 0.236 | 2 | 1 |
| C362A | 0.99 | 0.419 | 0.408 | 0.455 | 0.237 | 4 | 1 |
| A45MA346 | -0.85 | 0.439 | 0.601 | 0.277 | 0.239 | 3 | 1 |
| A35M07 | -0.89 | 0.481 | 0.312 | 0.508 | 0.239 | 1 | 1 |
| A951 | 0.67 | 0.439 | 0.480 | 0.372 | 0.239 | 6 | 1 |
| C664A | 0.81 | 0.481 | 0.542 | 0.290 | 0.241 | 5 | 1 |
| A952D | 1.8 | 0.522 | 0.553 | 0.251 | 0.242 | 1 | 1 |
| C652C | 0.1 | 0.419 | 0.445 | 0.432 | 0.242 | 3 | 1 |
| C1154CI | 0.31 | 0.336 | 0.602 | 0.382 | 0.243 | 3 | 1 |
| C95M06 | -0.16 | 0.398 | 0.656 | 0.287 | 0.244 | 7 | 1 |
| A6612 | 0.02 | 0.666 | 0.379 | 0.301 | 0.246 | 7 | 1 |
| A85M0184 | 1.22 | 0.398 | 0.519 | 0.397 | 0.247 | 1 | 1 |
| C46MA7 | -0.23 | 0.378 | 0.495 | 0.441 | 0.247 | 3 | 1 |
| I65M0566 | 0.7 | 0.439 | 0.244 | 0.680 | 0.248 | 6 | 1 |
| A1156A | 1.2 | 0.378 | 0.509 | 0.430 | 0.248 | 4 | 1 |
| A653 | -0.15 | 0.543 | 0.350 | 0.432 | 0.249 | 2 | 1 |
| C661A | 0.94 | 0.275 | 0.840 | 0.314 | 0.251 | 5 | 1 |
| A952C | 0.61 | 0.378 | 0.743 | 0.268 | 0.252 | 2 | 1 |
| C1153A | 0.76 | 0.316 | 0.240 | 0.919 | 0.254 | 3 | 1 |
| C115M05 | 0.03 | 0.666 | 0.283 | 0.424 | 0.256 | 2 | 1 |
| C953CII | 0.08 | 0.357 | 0.267 | 0.796 | 0.256 | 7 | 1 |
| C35M01 | -0.36 | 0.460 | 0.587 | 0.309 | 0.257 | 5 | 1 |
| A45MA246 | -0.5 | 0.378 | 0.443 | 0.524 | 0.258 | 2 | 1 |
| C651A662A | -0.9 | 0.357 | 0.448 | 0.543 | 0.259 | 5 | 1 |
| C663D | 0.55 | 0.419 | 0.381 | 0.554 | 0.261 | 7 | 1 |
| C115M08 | -0.19 | 0.584 | 0.294 | 0.492 | 0.261 | 3 | 1 |
| A1153A | -0.03 | 0.604 | 0.345 | 0.418 | 0.262 | 1 | 1 |
| C115M03 | 0.98 | 0.522 | 0.248 | 0.623 | 0.264 | 3 | 1 |
| A1152A | -0.58 | 0.439 | 0.334 | 0.601 | 0.265 | 2 | 1 |
| A55M08 | 0.15 | 0.378 | 0.479 | 0.504 | 0.265 | 4 | 1 |



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|----------|-------|-------|-------|-------|-------|---|---|
| C1156A | -0.22 | 0.295 | 0.472 | 0.617 | 0.265 | 5 | 1 |
| A36B | -0.79 | 0.481 | 0.559 | 0.336 | 0.267 | 2 | 1 |
| A1155AII | 0.16 | 0.336 | 0.304 | 0.804 | 0.267 | 1 | 1 |
| C85M0784 | -1.17 | 0.687 | 0.230 | 0.514 | 0.272 | 7 | 1 |
| A562A | -1.62 | 0.295 | 0.620 | 0.487 | 0.272 | 4 | 1 |
| A652A | -0.33 | 0.501 | 0.318 | 0.574 | 0.273 | 1 | 1 |
| I65M0766 | -1.04 | 0.625 | 0.488 | 0.308 | 0.281 | 7 | 1 |
| C952 | 0.7 | 0.439 | 0.251 | 0.779 | 0.281 | 5 | 1 |
| C115M07 | -1.12 | 0.666 | 0.343 | 0.416 | 0.281 | 1 | 1 |
| A46MA4 | 1.41 | 0.501 | 0.680 | 0.263 | 0.282 | 3 | 0 |
| C115M06 | 1.01 | 0.584 | 0.420 | 0.409 | 0.284 | 7 | 0 |
| C663A | 0.86 | 0.419 | 0.746 | 0.295 | 0.284 | 3 | 0 |
| A561A | -1.51 | 0.254 | 0.687 | 0.519 | 0.287 | 5 | 0 |
| A1153B | 0.34 | 0.584 | 0.459 | 0.379 | 0.287 | 1 | 0 |
| I65M0266 | 0.98 | 0.357 | 0.598 | 0.475 | 0.289 | 6 | 0 |
| A952A | 0.63 | 0.398 | 0.545 | 0.490 | 0.294 | 3 | 0 |
| C652B | 0.2 | 0.378 | 0.484 | 0.577 | 0.295 | 2 | 0 |
| C653B | -1.07 | 0.666 | 0.443 | 0.349 | 0.295 | 3 | 0 |
| C46MA8 | -3.18 | 0.996 | 0.284 | 0.322 | 0.301 | 2 | 0 |
| C46MB5 | -0.41 | 0.646 | 0.520 | 0.314 | 0.304 | 3 | 0 |
| A95M02 | -3.22 | 0.769 | 0.406 | 0.333 | 0.305 | 3 | 0 |
| A36C | 0.02 | 0.192 | 0.826 | 0.536 | 0.305 | 2 | 0 |
| C652A | -0.84 | 0.625 | 0.487 | 0.361 | 0.306 | 2 | 0 |
| A1155AI | -0.3 | 0.357 | 0.400 | 0.755 | 0.309 | 1 | 0 |
| C654 | 0.29 | 0.481 | 0.248 | 0.819 | 0.310 | 7 | 0 |
| A1156B | 0.42 | 0.501 | 0.337 | 0.663 | 0.314 | 2 | 0 |
| A6621 | 0.16 | 0.316 | 0.629 | 0.561 | 0.315 | 1 | 0 |
| C1156B | 1.46 | 0.336 | 0.405 | 0.799 | 0.315 | 2 | 0 |
| A56M01 | 3.07 | 0.460 | 0.655 | 0.389 | 0.318 | 7 | 0 |
| C56M05 | -0.94 | 0.604 | 0.571 | 0.335 | 0.320 | 3 | 0 |
| C46MB8 | -2.96 | 1.058 | 0.317 | 0.298 | 0.323 | 2 | 0 |
| C662C | -0.47 | 0.439 | 0.452 | 0.613 | 0.323 | 1 | 0 |
| A36A | -1.7 | 0.687 | 0.565 | 0.287 | 0.324 | 2 | 0 |
| A85M0384 | -0.08 | 0.398 | 0.548 | 0.569 | 0.328 | 3 | 0 |
| C56M04 | -1.2 | 0.666 | 0.242 | 0.657 | 0.328 | 2 | 0 |
| C85M0984 | -0.08 | 0.563 | 0.391 | 0.571 | 0.332 | 7 | 0 |
| C36M01 | 1.85 | 0.584 | 0.742 | 0.256 | 0.334 | 2 | 0 |
| C46MB7 | 0.73 | 0.604 | 0.319 | 0.630 | 0.335 | 6 | 0 |
| A56M03 | -0.71 | 0.728 | 0.337 | 0.501 | 0.337 | 4 | 0 |
| A85M05 | -2.31 | 0.687 | 0.652 | 0.249 | 0.338 | 4 | 0 |
| C953CI | -1.83 | 0.563 | 0.391 | 0.589 | 0.338 | 3 | 0 |
| A1152C | 3.83 | 0.584 | 0.300 | 0.691 | 0.340 | 2 | 0 |
| C66M10 | 0.73 | 0.233 | 0.924 | 0.500 | 0.344 | 3 | 0 |
| C364BI | 4.19 | 0.501 | 0.501 | 0.547 | 0.346 | 2 | 0 |
| A45MB346 | -1.18 | 0.666 | 0.449 | 0.450 | 0.347 | 2 | 0 |
| C55M01 | -0.5 | 0.728 | 0.288 | 0.587 | 0.349 | 6 | 0 |
| A562C | -0.72 | 0.233 | 0.691 | 0.703 | 0.351 | 3 | 0 |
| A1155BII | 2.23 | 0.522 | 0.347 | 0.736 | 0.356 | 1 | 0 |
| C55M04 | 1.5 | 0.336 | 0.723 | 0.546 | 0.356 | 3 | 0 |
| C95M07 | 1.49 | 0.481 | 0.587 | 0.510 | 0.358 | 4 | 0 |
| C563AI | -4.74 | 0.831 | 0.545 | 0.273 | 0.359 | 2 | 0 |



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|-----------|-------|-------|-------|-------|-------|---|---|
| C663C | -0.13 | 0.604 | 0.411 | 0.577 | 0.361 | 6 | 0 |
| A46MB4 | 0.45 | 0.481 | 0.786 | 0.367 | 0.365 | 3 | 0 |
| A36D | 1.27 | 0.378 | 0.720 | 0.522 | 0.366 | 2 | 0 |
| A6611 | -2.35 | 0.975 | 0.324 | 0.410 | 0.367 | 1 | 0 |
| A1151I | -2.92 | 0.687 | 0.468 | 0.470 | 0.374 | 2 | 0 |
| C1154CII | 1.36 | 0.646 | 0.422 | 0.561 | 0.378 | 1 | 0 |
| C66M06 | -1 | 0.687 | 0.452 | 0.496 | 0.379 | 5 | 0 |
| C563AII | -0.46 | 0.481 | 0.688 | 0.466 | 0.379 | 4 | 0 |
| C55M02 | -0.13 | 0.522 | 0.686 | 0.430 | 0.380 | 2 | 0 |
| C45MA8 | -2.98 | 1.058 | 0.414 | 0.300 | 0.381 | 2 | 0 |
| C46MA5 | 2.47 | 0.481 | 0.700 | 0.470 | 0.386 | 4 | 0 |
| C361C | -1.02 | 0.460 | 0.520 | 0.673 | 0.389 | 2 | 0 |
| C1155 | -1.42 | 0.687 | 0.548 | 0.424 | 0.390 | 3 | 0 |
| A56M02 | 0.77 | 0.563 | 0.643 | 0.453 | 0.393 | 1 | 0 |
| C45MB5 | 1.91 | 0.749 | 0.521 | 0.409 | 0.394 | 2 | 0 |
| I65M0366 | -1.1 | 0.625 | 0.578 | 0.459 | 0.395 | 3 | 0 |
| A1151II | -2.08 | 0.646 | 0.507 | 0.561 | 0.422 | 1 | 0 |
| C364BII | 0.48 | 0.666 | 0.434 | 0.657 | 0.438 | 1 | 0 |
| A85M0284 | 0.24 | 0.728 | 0.650 | 0.395 | 0.441 | 1 | 0 |
| I65M1166 | 0.18 | 0.439 | 0.437 | 0.945 | 0.442 | 7 | 0 |
| A562D | -1.42 | 0.625 | 0.743 | 0.424 | 0.452 | 4 | 0 |
| C562 | -0.31 | 0.398 | 0.661 | 0.742 | 0.455 | 2 | 0 |
| C115M04 | 1.07 | 0.625 | 0.770 | 0.415 | 0.459 | 2 | 0 |
| C66M08 | -2.02 | 0.769 | 0.467 | 0.568 | 0.460 | 2 | 0 |
| C55M05 | 0.12 | 0.419 | 0.694 | 0.696 | 0.461 | 7 | 0 |
| C653A | -1.93 | 0.831 | 0.561 | 0.431 | 0.462 | 1 | 0 |
| A1154A | -1.05 | 0.501 | 0.446 | 0.896 | 0.465 | 1 | 0 |
| A6614 | 1.49 | 0.419 | 0.584 | 0.827 | 0.465 | 3 | 0 |
| A1155BIII | 0.56 | 0.625 | 0.377 | 0.848 | 0.470 | 3 | 0 |
| C363A | -0.39 | 0.522 | 0.560 | 0.745 | 0.475 | 2 | 0 |
| A1155BI | -0.25 | 0.563 | 0.420 | 0.882 | 0.478 | 3 | 0 |
| C663B | 0 | 0.790 | 0.738 | 0.348 | 0.482 | 3 | 0 |
| C36M02 | -5.05 | 0.872 | 0.822 | 0.239 | 0.486 | 2 | 0 |
| C65M08 | -1.04 | 0.749 | 0.437 | 0.674 | 0.488 | 1 | 0 |
| C364A | 0.02 | 0.378 | 0.734 | 0.789 | 0.500 | 5 | 0 |
| A1154BI | -0.43 | 0.295 | 0.661 | 1.048 | 0.518 | 2 | 0 |
| C361A | -1.68 | 0.707 | 0.598 | 0.605 | 0.525 | 1 | 0 |
| A1154BIII | 0.35 | 0.316 | 0.717 | 0.964 | 0.529 | 6 | 0 |
| C35M04 | -2.27 | 0.790 | 0.796 | 0.394 | 0.543 | 2 | 0 |
| C362B | -2.09 | 0.913 | 0.436 | 0.643 | 0.548 | 1 | 0 |
| C955 | -2.09 | 0.769 | 0.554 | 0.643 | 0.553 | 3 | 0 |
| C561AII | -4.51 | 0.810 | 0.549 | 0.613 | 0.553 | 5 | 0 |
| I65M06 | -1.36 | 0.810 | 0.727 | 0.457 | 0.559 | 7 | 0 |
| C953A | -5.56 | 1.161 | 0.497 | 0.434 | 0.562 | 3 | 0 |
| I65M0166 | 0.27 | 0.707 | 0.681 | 0.596 | 0.567 | 7 | 0 |
| C56M07 | 2.13 | 0.790 | 0.654 | 0.551 | 0.568 | 4 | 0 |
| C662F | 3.75 | 0.646 | 0.783 | 0.609 | 0.595 | 7 | 0 |
| C35M03 | -0.97 | 0.563 | 1.013 | 0.521 | 0.603 | 3 | 0 |
| A952B | -1.15 | 0.852 | 0.897 | 0.370 | 0.611 | 3 | 0 |
| C85M0684 | 1.96 | 0.687 | 0.475 | 0.935 | 0.611 | 4 | 0 |
| I65M1266 | 1.62 | 0.460 | 0.679 | 0.972 | 0.615 | 2 | 0 |



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|--------------|--------|-------|-------|-------|--------------|-------|---|
| C95M05 | 1.3 | 0.398 | 0.729 | 1.007 | 0.617 | 3 | 0 |
| C563C | -1.31 | 0.357 | 0.695 | 1.144 | 0.628 | 2 | 0 |
| C45MA6 | -2.84 | 0.852 | 0.998 | 0.333 | 0.634 | 3 | 0 |
| C56M08 | 0.33 | 0.398 | 0.681 | 1.112 | 0.637 | 3 | 0 |
| C661B | 0.09 | 0.563 | 0.782 | 0.797 | 0.655 | 3 | 0 |
| C85M1084 | 0.53 | 0.460 | 0.656 | 1.090 | 0.658 | 7 | 0 |
| C664C | -1.61 | 1.058 | 0.776 | 0.612 | 0.842 | 2 | 0 |
| C953B | 2.4 | 0.831 | 0.839 | 0.865 | 0.927 | 3 | 0 |
| C46MB6 | -2.24 | 0.996 | 1.047 | 0.544 | 0.933 | 7 | 0 |
| C664B | 0.96 | 0.398 | 1.399 | 0.891 | 0.935 | 5 | 0 |
| C665 | -0.27 | 0.625 | 1.469 | 0.758 | 1.085 | 3 | 0 |
| | | | | | | | |
| Average diff | 0.0617 | | | | Median QI | 0.282 | |
| Median diff | 0.13 | | | | | | |