GGGGGGGGGG EEEEEEEEEEEE NN NN OOOOOOOO VV VV AAAAAAAAAA

 GGGGGGGGGGGG EEEEEEEEEEEE NNN NN OOOOOOOOOO VV VV AAAAAAAAAAAA

 GG G EE NNNN NN OO OO VV VV AA AA

 GG EE NN NN NN OO OO VV VV AA AA

 GG EE NN NN NN OO OO VV VV AA AA

 GG EE NN NN NN OO OO VV VV AA AA

 GG EE NN NN NN OO OO VV VV AA AA

 GG EEEEEEEE NN NN NN OO OO VV VV AA AA

 GG GGGG EEEEEEEE NN NNNN OO OO VV VV AAAAAAAAAAAA

 GG GGGG EE NN NNN OO OO VV VV AAAAAAAAAAAA

 GG GG EE NN NN OO OO VV VV AA AA

 GG GG EE NN NN OO OO VV VV AA AA

 GG GG EE NN NN OO OO V V AA AA

 GG GG EE NN NN OO OO VVVV AA AA

 GGGGGGGGGGGG EEEEEEEEEEEE NN NN OOOOOOOOOO VVVV AA AA

 GGGGGGGGGG EEEEEEEEEEEE NN NN OOOOOOOO VV AA AA

 A GENERAL PURPOSE ANALYSIS OF VARIANCE SYSTEM

 --- - --

 GENOVA IS A FORTRAN 77 PROGRAM FOR ANALYSIS OF VARIANCE

 AND GENERALIZABILITY ANALYSES WITH BALANCED DESIGNS

 AUTHORS

 Joe E. Crick, Ed.D.

 Chief Technology & Information Officer

 Vice President Applications and Database Services

 National Board of Medical Examiners

 Philadelphia, PA 19104

 Robert L. Brennan, Ed.D.

 Director, Iowa Testing Program

 University of Iowa

 Iowa City, Iowa 52242

 VERSION 3.1

 January, 2001

 GENOVA has been checked for accuracy of output, however the authors

 can make no assurances that the program is totally without error.

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 Development Center (NPRDC); Robert L. Brennan Principal Investigator. GENOVA does not necessarily

 reflect NPRDC positions or policy, and no official endorsement should be inferred

 GENOVA VERSION 3.1 PAGE 1

 CONTROL CARD INPUT LISTING

 COLUMN 11111111112222222222333333333344444444445555555555666666666677777777778

 12345678901234567890123456789012345678901234567890123456789012345678901234567890

 STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 COMMENT Women's Finals

 COMMENT # RECORDS = 23

 COMMENT 4 TASKS, 9 JUDGES

 COMMENT # VALUES PER RECORD = 36

 OPTIONS RECORDS ALL

 EFFECT \* P 23 0

 EFFECT + T 4 0

 EFFECT + J 9 0

 FORMAT (36F3.1)

 PROCESS

 GENOVA VERSION 3.1 PAGE 2

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 EXPANDED MAIN AND INTERACTION EFFECT TABLE

 (\*\* = INFINITE) P T J TOTAL DEGREES

 SAMPLE SIZE 23 4 9 PRIMARY NUMBER OF

 UNIVERSE SIZE \*\*\*\* \*\*\*\* \*\*\*\* INDICES INDICES FREEDOM

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 \* \* \* \* \*

 \* P \* 1 \* 0 \* 0 \* 1 1 22

 \* T \* 0 \* 1 \* 0 \* 1 1 3

 \* J \* 0 \* 0 \* 1 \* 1 1 8

 \* \* \* \* \*

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 \* \* \* \* \*

 \* PT \* 1 \* 1 \* 0 \* 2 2 66

 \* PJ \* 1 \* 0 \* 1 \* 2 2 176

 \* TJ \* 0 \* 1 \* 1 \* 2 2 24

 \* \* \* \* \*

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 \* \* \* \* \*

 \* PTJ \* 1 \* 1 \* 1 \* 3 3 528

 \* \* \* \* \*

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 GENOVA VERSION 3.1 PAGE 3

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 INPUT RECORD LISTING WITH RECORD MEANS

 RECORD # 1 5.20000 5.10000 5.60000 5.30000 5.30000 5.50000 5.20000 5.60000

 5.50000 5.70000 5.50000 5.70000 5.50000 5.50000 5.70000 5.60000

 5.70000 5.70000 5.70000 5.80000 5.80000 5.80000 5.80000 5.80000

 5.70000 5.80000 5.80000 5.70000 5.70000 5.80000 5.80000 5.80000

 5.80000 5.70000 5.80000 5.80000 5.63333

 RECORD # 2 5.80000 5.80000 5.80000 5.70000 5.60000 5.80000 5.80000 5.80000

 5.70000 5.70000 5.80000 5.90000 5.80000 5.60000 5.80000 5.90000

 5.80000 5.60000 5.70000 5.80000 5.90000 5.80000 5.80000 5.80000

 5.80000 5.70000 5.80000 5.60000 5.90000 5.90000 5.80000 5.60000

 5.90000 5.70000 5.70000 5.70000 5.76667

 RECORD # 3 5.80000 5.70000 5.90000 5.70000 5.50000 5.70000 5.70000 5.70000

 5.60000 5.90000 5.90000 5.90000 5.90000 5.90000 5.90000 5.90000

 5.90000 5.90000 5.60000 5.70000 5.80000 5.70000 5.60000 5.60000

 5.60000 5.70000 5.60000 5.70000 5.80000 5.90000 5.80000 5.80000

 5.90000 5.80000 5.80000 5.80000 5.76667

 RECORD # 4 5.80000 5.60000 5.70000 5.50000 5.60000 5.60000 5.70000 5.70000

 5.60000 5.80000 5.70000 5.80000 5.60000 5.70000 5.80000 5.80000

 5.80000 5.80000 5.50000 5.80000 5.70000 5.70000 5.70000 5.60000

 5.60000 5.60000 5.60000 5.50000 5.80000 5.80000 5.70000 5.70000

 5.80000 5.70000 5.70000 5.70000 5.68889

 RECORD # 5 5.60000 5.10000 5.50000 5.20000 5.50000 5.00000 5.20000 5.50000

 5.40000 5.60000 5.10000 5.40000 5.00000 5.60000 5.20000 5.30000

 5.70000 5.60000 5.50000 5.40000 5.70000 5.40000 5.60000 5.50000

 5.50000 5.40000 5.50000 5.60000 5.50000 5.60000 5.30000 5.60000

 5.50000 5.50000 5.60000 5.60000 5.43889

 RECORD # 6 5.20000 5.70000 5.50000 5.60000 5.00000 5.70000 5.40000 5.40000

 5.40000 5.60000 5.80000 5.60000 5.80000 5.60000 5.70000 5.50000

 5.60000 5.50000 5.20000 5.60000 5.40000 5.10000 4.90000 5.60000

 4.90000 5.30000 5.40000 5.50000 5.60000 5.50000 5.40000 5.20000

 5.70000 5.40000 5.50000 5.50000 5.45278

 RECORD # 7 5.10000 5.40000 5.30000 5.20000 5.00000 5.40000 4.80000 5.10000

 5.20000 5.40000 5.60000 5.40000 5.30000 5.30000 5.40000 5.00000

 5.30000 5.50000 5.30000 5.60000 5.30000 5.10000 5.30000 5.40000

 5.00000 5.30000 5.30000 5.40000 5.50000 5.60000 5.30000 5.30000

 5.50000 5.20000 5.60000 5.50000 5.31111

 RECORD # 8 5.50000 5.40000 5.50000 5.40000 5.00000 5.40000 5.50000 5.30000

 5.20000 5.30000 5.30000 5.50000 5.20000 5.20000 5.30000 5.20000

 5.40000 5.30000 5.40000 5.40000 5.30000 5.20000 5.40000 5.60000

 5.10000 5.30000 5.30000 5.30000 5.30000 5.30000 5.30000 5.20000

 5.60000 5.00000 5.30000 5.40000 5.32222

 GENOVA VERSION 3.1 PAGE 4

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 INPUT RECORD LISTING WITH RECORD MEANS

 RECORD # 9 5.00000 5.10000 5.30000 5.00000 4.70000 5.20000 5.10000 4.80000

 5.30000 5.30000 5.40000 5.50000 5.40000 5.10000 5.50000 5.40000

 5.10000 5.30000 5.30000 5.50000 5.00000 5.10000 5.10000 5.10000

 5.30000 5.10000 4.80000 4.90000 5.60000 5.20000 5.00000 5.10000

 5.40000 5.40000 5.30000 4.80000 5.18056

 RECORD # 10 5.00000 5.50000 5.10000 4.90000 4.80000 5.30000 5.10000 5.20000

 5.10000 5.40000 5.50000 5.60000 5.00000 5.40000 5.60000 5.50000

 5.50000 5.40000 4.70000 5.20000 4.70000 4.60000 4.90000 5.00000

 4.90000 4.80000 4.90000 5.10000 5.40000 5.00000 5.00000 5.30000

 5.30000 5.30000 5.10000 5.20000 5.14722

 RECORD # 11 4.10000 4.30000 4.10000 4.50000 4.50000 4.10000 4.30000 4.10000

 4.50000 4.80000 5.00000 4.90000 5.00000 5.00000 5.00000 5.10000

 4.90000 5.00000 5.20000 5.30000 5.20000 5.30000 4.90000 5.20000

 5.20000 4.90000 5.00000 5.40000 5.40000 5.10000 5.30000 5.20000

 5.40000 5.40000 5.10000 4.80000 4.90278

 RECORD # 12 4.50000 4.50000 5.00000 4.50000 4.30000 4.70000 4.40000 4.40000

 4.50000 5.30000 5.20000 5.60000 5.40000 5.30000 5.40000 5.10000

 5.20000 5.30000 4.90000 5.30000 5.20000 5.00000 4.80000 5.00000

 5.00000 5.00000 5.20000 5.00000 5.20000 5.50000 5.00000 4.80000

 5.30000 5.10000 5.20000 5.00000 5.00278

 RECORD # 13 5.00000 5.00000 5.60000 5.40000 5.10000 5.20000 5.30000 5.30000

 5.40000 5.10000 5.30000 5.60000 5.10000 5.00000 5.30000 5.40000

 5.00000 5.40000 4.90000 5.10000 5.30000 5.10000 5.00000 5.40000

 4.80000 4.80000 5.10000 4.90000 5.00000 5.50000 4.70000 5.00000

 5.30000 4.80000 4.60000 4.90000 5.13056

 RECORD # 14 4.40000 4.30000 4.50000 4.40000 4.20000 4.50000 4.40000 4.10000

 4.20000 5.20000 5.10000 5.20000 5.00000 5.10000 5.30000 5.30000

 4.70000 4.70000 4.80000 4.10000 5.50000 5.00000 5.00000 5.10000

 4.90000 4.80000 4.90000 5.00000 5.30000 5.60000 5.10000 5.30000

 5.30000 4.90000 4.70000 4.70000 4.85000

 RECORD # 15 4.70000 4.90000 5.40000 4.70000 4.80000 4.90000 4.60000 4.40000

 4.80000 5.20000 4.90000 5.30000 5.10000 5.30000 5.00000 4.90000

 5.10000 5.20000 5.10000 5.10000 5.00000 4.90000 5.20000 5.10000

 5.00000 4.90000 5.00000 4.90000 4.80000 5.00000 5.00000 5.00000

 5.20000 4.80000 4.60000 4.90000 4.96389

 RECORD # 16 5.40000 5.40000 5.20000 5.00000 5.00000 5.30000 5.00000 4.90000

 5.30000 5.70000 5.40000 5.50000 5.10000 5.40000 5.50000 5.30000

 5.10000 5.50000 4.70000 4.90000 4.80000 4.70000 4.70000 4.60000

 4.50000 4.60000 4.70000 4.90000 5.20000 5.20000 4.80000 4.80000

 5.10000 5.00000 4.70000 4.80000 5.04722

 GENOVA VERSION 3.1 PAGE 5

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 INPUT RECORD LISTING WITH RECORD MEANS

 RECORD # 17 4.80000 4.90000 4.60000 4.60000 4.30000 4.50000 4.40000 4.60000

 4.40000 4.80000 5.00000 4.80000 4.80000 4.50000 4.80000 4.50000

 4.90000 4.40000 5.30000 5.40000 5.60000 5.20000 5.10000 5.40000

 5.10000 5.10000 5.30000 4.80000 5.00000 5.20000 4.60000 4.60000

 5.10000 4.60000 4.80000 4.80000 4.85000

 RECORD # 18 4.50000 4.40000 3.90000 3.70000 4.10000 4.60000 4.30000 4.40000

 5.00000 5.00000 4.80000 4.30000 4.40000 4.30000 4.70000 5.00000

 4.80000 4.60000 4.40000 4.60000 4.00000 4.40000 4.20000 4.80000

 4.00000 4.40000 4.30000 4.60000 4.90000 4.30000 4.40000 4.20000

 5.00000 4.90000 4.70000 4.60000 4.48611

 RECORD # 19 3.90000 4.40000 4.50000 4.20000 3.70000 4.30000 3.80000 4.20000

 4.30000 4.20000 4.80000 5.00000 4.40000 4.10000 4.60000 3.80000

 4.70000 4.70000 4.60000 4.60000 4.90000 4.40000 4.70000 4.90000

 4.40000 4.50000 4.70000 4.40000 4.60000 5.10000 4.20000 4.60000

 4.80000 4.40000 4.60000 4.70000 4.46389

 RECORD # 20 4.40000 4.60000 5.30000 4.00000 4.10000 4.20000 4.30000 3.90000

 4.20000 5.10000 4.90000 5.30000 4.30000 4.70000 4.50000 5.00000

 4.40000 4.80000 4.60000 4.70000 4.50000 4.50000 4.60000 4.50000

 4.30000 4.50000 4.50000 4.60000 4.60000 4.70000 4.30000 4.50000

 4.40000 4.50000 4.50000 4.30000 4.53056

 RECORD # 21 4.60000 4.40000 5.20000 4.20000 4.10000 4.70000 4.40000 3.80000

 4.20000 4.90000 4.90000 5.30000 4.70000 4.60000 5.00000 4.80000

 4.60000 4.60000 4.30000 4.50000 4.50000 4.30000 4.30000 4.30000

 4.10000 4.30000 4.10000 4.40000 4.70000 4.90000 4.60000 4.30000

 4.50000 4.70000 4.30000 4.20000 4.50833

 RECORD # 22 4.50000 4.50000 3.80000 4.60000 4.50000 4.90000 4.70000 4.40000

 4.50000 4.90000 4.60000 4.50000 4.60000 4.50000 5.10000 4.80000

 4.50000 4.60000 4.40000 4.30000 4.00000 4.60000 4.30000 4.40000

 4.20000 4.40000 4.20000 4.50000 4.20000 4.10000 4.70000 4.10000

 4.40000 4.20000 4.30000 4.40000 4.45000

 RECORD # 23 4.00000 4.30000 3.90000 4.10000 4.10000 3.90000 4.10000 3.90000

 3.90000 4.50000 4.70000 4.40000 4.40000 4.70000 4.30000 4.80000

 4.50000 3.90000 4.20000 3.90000 4.40000 4.20000 4.10000 3.70000

 3.70000 4.20000 4.00000 4.10000 3.80000 4.20000 4.10000 4.20000

 3.60000 4.00000 4.10000 3.90000 4.13333

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 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 CELL MEAN SCORES

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 \*\*\* GRAND MEAN = 5.0446860 \*\*\*

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 MEAN SCORES FOR EFFECT: T SUBSCRIPT NOTATION: (T)

 (1) = 4.894203 (2) = 5.181643 (3) = 5.023671 (4) = 5.079227

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 MEAN SCORES FOR EFFECT: J SUBSCRIPT NOTATION: (J)

 (1) = 5.046739 (2) = 5.118478 (3) = 5.170652 (4) = 4.983696

 (5) = 4.960870 (6) = 5.130435 (7) = 4.989130 (8) = 4.985870

 (9) = 5.016304

 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 MEAN SCORES FOR EFFECT: TJ SUBSCRIPT NOTATION: (T,J)

 (1,1) = 4.904348 (1,2) = 4.969565 (1,3) = 5.052174 (1,4) = 4.843478

 (1,5) = 4.730435 (1,6) = 4.973913 (1,7) = 4.847826 (1,8) = 4.804348

 (2,1) = 5.234783 (2,2) = 5.226087 (2,3) = 5.304348 (2,4) = 5.078261

 (2,5) = 5.104348 (2,6) = 5.234783 (2,7) = 5.169565 (2,8) = 5.139130

 (3,1) = 5.013043 (3,2) = 5.113043 (3,3) = 5.108696 (3,4) = 5.004348

 (3,5) = 5.000000 (3,6) = 5.104348 (3,7) = 4.895652 (3,8) = 4.973913

 (4,1) = 5.034783 (4,2) = 5.165217 (4,3) = 5.217391 (4,4) = 5.008696

 (4,5) = 5.008696 (4,6) = 5.208696 (4,7) = 5.043478 (4,8) = 5.026087

 (4,9) = 5.000000

 GENOVA VERSION 3.1 PAGE 7

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 ANOVA TABLE

 (\*\* = INFINITE) P T J

 SAMPLE SIZE 23 4 9

 UNIVERSE SIZE \*\*\*\* \*\*\*\* \*\*\*\*

 ------------------------------------------------------------------------------------------------------------------

 DEGREES SUMS OF SUMS OF (QF = QUASI F RATIO)

 OF SQUARES FOR SQUARES FOR MEAN F F-TEST DEGREES OF FREEDOM

 EFFECT FREEDOM MEAN SCORES SCORE EFFECTS SQUARES STATISTIC NUMERATOR DENOMINATOR

 ------------------------------------------------------------------------------------------------------------------

 P 22 21244.45667 172.80329 7.85469 22.22502 QF 22 QF 91 QF

 T 3 21080.56203 8.90865 2.96955 9.41882 QF 3 QF 71 QF

 J 8 21075.95587 4.30249 .53781 5.66823 QF 8 QF 91 QF

 ------------------------------------------------------------------------------------------------------------------

 PT 66 21273.01556 19.65024 .29773 13.75296 66 528

 PJ 176 21262.37000 13.61085 .07733 3.57227 176 528

 TJ 24 21085.80522 .94070 .03920 1.81056 24 528

 ------------------------------------------------------------------------------------------------------------------

 PTJ 528 21303.30000 11.43041 .02165

 ------------------------------------------------------------------------------------------------------------------

 MEAN 21071.65338

 ------------------------------------------------------------------------------------------------------------------

 TOTAL 827 231.64662

 ------------------------------------------------------------------------------------------------------------------

 NOTE: FOR GENERALIZABILITY ANALYSES, F-STATISTICS SHOULD BE IGNORED

 GENOVA VERSION 3.1 PAGE 8

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 G STUDY RESULTS

 (\*\* = INFINITE) P T J

 SAMPLE SIZE 23 4 9

 UNIVERSE SIZE \*\*\*\* \*\*\*\* \*\*\*\* QFM = QUADRATIC FORM

 -----------------------------------------------------------------------------

 M O D E L V A R I A N C E C O M P O N E N T S

 DEGREES - - - - - - - - - - - - - - - - - - - - - - -

 OF USING USING EMS STANDARD

 EFFECT FREEDOM ALGORITHM EQUATIONS ERROR

 -----------------------------------------------------------------------------

 P 22 .2083688 .2083688 .0630013

 T 3 .0128226 .0128226 .0090765

 J 8 .0048144 .0048144 .0026185

 -----------------------------------------------------------------------------

 PT 66 .0306758 .0306758 .0056753

 PJ 176 .0139215 .0139215 .0020761

 TJ 24 .0007629 .0007629 .0004762

 -----------------------------------------------------------------------------

 PTJ 528 .0216485 .0216485 .0013299

 -----------------------------------------------------------------------------

 NOTE: THE "ALGORITHM" AND "EMS" ESTIMATED VARIANCE COMPONENTS WILL BE

 IDENTICAL IF THERE ARE NO NEGATIVE ESTIMATES

 GENOVA VERSION 3.1 PAGE 9

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 EXPECTED MEAN SQUARE EQUATIONS

 (\*\* = INFINITE) P T J

 SAMPLE SIZE 23 4 9

 UNIVERSE SIZE \*\*\*\* \*\*\*\* \*\*\*\*

 EMS(P) = 1.00\*VC(PTJ) + 4.00\*VC(PJ) + 9.00\*VC(PT) + 36.00\*VC(P)

 EMS(T) = 1.00\*VC(PTJ) + 23.00\*VC(TJ) + 9.00\*VC(PT) + 207.00\*VC(T)

 EMS(J) = 1.00\*VC(PTJ) + 23.00\*VC(TJ) + 4.00\*VC(PJ) + 92.00\*VC(J)

 EMS(PT) = 1.00\*VC(PTJ) + 9.00\*VC(PT)

 EMS(PJ) = 1.00\*VC(PTJ) + 4.00\*VC(PJ)

 EMS(TJ) = 1.00\*VC(PTJ) + 23.00\*VC(TJ)

 EMS(PTJ) = 1.00\*VC(PTJ)

 GENOVA VERSION 3.1 PAGE 10

 G STUDY G-Study of 2002 Winter Olympic Ice Skating Results

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (V)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000004 .0000824

 J .0000000 .0000000 .0000069

 PT -.0000081 -.0000014 .0000000 .0000322

 PJ -.0000005 .0000000 -.0000002 .0000000 .0000043

 TJ .0000000 .0000000 -.0000001 .0000000 .0000000 .0000002

 PTJ .0000000 .0000000 .0000000 -.0000002 -.0000004 -.0000001 .0000018

 GENOVA VERSION 3.1 PAGE 11

 CONTROL CARD INPUT LISTING

 COLUMN 11111111112222222222333333333344444444445555555555666666666677777777778

 12345678901234567890123456789012345678901234567890123456789012345678901234567890

 COLUMNS 1-12 BLANK WHEN NOT EXPECTED: CARD IMAGE =

 COMMENT STEP TWO

 COMMENT D STUDY 1 VARYING THE NUMBER OF JUDGES

 COMMENT

 DSTUDY P x T x J DESIGN

 DEFFECT $ P

 DEFFECT T 4

 DEFFECT J 1 3 5 7 9

 ENDDSTUDY

 GENOVA VERSION 3.1 PAGE 12

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-001

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 1

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

 ---------------------------------------------------------- -----------------------------------------------------------

 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 1 .00481 .00262 .00481 1.0000 1 .00481 .00262

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 1 .01392 .00208 .01392 1.0000 1 .01392 .00208

 TJ .00076 1.0000 4 .00019 .00012 .00076 1.0000 4 .00019 .00012

 PTJ .02165 1.0000 4 .00541 .00033 .02165 1.0000 4 .00541 .00033

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .23537 .48515 .06301

 LOWER CASE DELTA .02700 .16432 .00249 GENERALIZABILITY COEFFICIENT = .88528 ( 7.71664)

 UPPER CASE DELTA .03521 .18765 .00420 PHI = .85544 ( 5.91732)

 MEAN .01844 .13581

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 13

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-001

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000069

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000005 .0000000 -.0000002 .0000000 .0000043

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 -.0000001 .0000000 .0000001

 GENOVA VERSION 3.1 PAGE 14

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-002

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 3

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

 ---------------------------------------------------------- -----------------------------------------------------------

 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 3 .00160 .00087 .00481 1.0000 3 .00160 .00087

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 3 .00464 .00069 .01392 1.0000 3 .00464 .00069

 TJ .00076 1.0000 12 .00006 .00004 .00076 1.0000 12 .00006 .00004

 PTJ .02165 1.0000 12 .00180 .00011 .02165 1.0000 12 .00180 .00011

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .22248 .47168 .06299

 LOWER CASE DELTA .01411 .11880 .00157 GENERALIZABILITY COEFFICIENT = .93656 (14.76381)

 UPPER CASE DELTA .01899 .13780 .00286 PHI = .91649 (10.97399)

 MEAN .01455 .12061

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 15

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-002

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000008

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000002 .0000000 .0000000 .0000000 .0000005

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 16

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-003

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 5

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 5 .00096 .00052 .00481 1.0000 5 .00096 .00052

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 5 .00278 .00042 .01392 1.0000 5 .00278 .00042

 TJ .00076 1.0000 20 .00004 .00002 .00076 1.0000 20 .00004 .00002

 PTJ .02165 1.0000 20 .00108 .00007 .02165 1.0000 20 .00108 .00007

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .21990 .46894 .06299

 LOWER CASE DELTA .01154 .10740 .00148 GENERALIZABILITY COEFFICIENT = .94754 (18.06300)

 UPPER CASE DELTA .01574 .12547 .00272 PHI = .92976 (13.23620)

 MEAN .01377 .11734

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 17

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-003

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000003

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000001 .0000000 .0000000 .0000000 .0000002

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 18

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-004

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 7

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

 ---------------------------------------------------------- -----------------------------------------------------------

 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 7 .00069 .00037 .00481 1.0000 7 .00069 .00037

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 7 .00199 .00030 .01392 1.0000 7 .00199 .00030

 TJ .00076 1.0000 28 .00003 .00002 .00076 1.0000 28 .00003 .00002

 PTJ .02165 1.0000 28 .00077 .00005 .02165 1.0000 28 .00077 .00005

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .21880 .46776 .06298

 LOWER CASE DELTA .01043 .10213 .00145 GENERALIZABILITY COEFFICIENT = .95233 (19.97612)

 UPPER CASE DELTA .01435 .11980 .00268 PHI = .93556 (14.51889)

 MEAN .01343 .11590

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 19

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-004

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000001

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 20

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-005

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 9

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 9 .00053 .00029 .00481 1.0000 9 .00053 .00029

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 9 .00155 .00023 .01392 1.0000 9 .00155 .00023

 TJ .00076 1.0000 36 .00002 .00001 .00076 1.0000 36 .00002 .00001

 PTJ .02165 1.0000 36 .00060 .00004 .02165 1.0000 36 .00060 .00004

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .21819 .46710 .06298

 LOWER CASE DELTA .00982 .09908 .00144 GENERALIZABILITY COEFFICIENT = .95501 (21.22502)

 UPPER CASE DELTA .01358 .11653 .00267 PHI = .93882 (15.34504)

 MEAN .01325 .11510

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 21

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 001-005

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000001

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 22

 D STUDY P x T x J DESIGN

 SUMMARY OF D STUDY RESULTS FOR SET OF CONTROL CARDS NO. 001

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 V A R I A N C E S

 SAMPLE SIZES --------------------------------------------------------

 D STUDY ------------------------------------- EXPECTED LOWER UPPER

 DESIGN INDEX= $P T J UNIVERSE OBSERVED CASE CASE GEN.

 NO UNIV.= INF. INF. INF. SCORE SCORE DELTA DELTA MEAN COEF. PHI

 ---------------------------------------------------------------------------------------------------------------------------------

 001-001 23 4 1 .20837 .23537 .02700 .03521 .01844 .88528 .85544

 001-002 23 4 3 .20837 .22248 .01411 .01899 .01455 .93656 .91649

 001-003 23 4 5 .20837 .21990 .01154 .01574 .01377 .94754 .92976

 001-004 23 4 7 .20837 .21880 .01043 .01435 .01343 .95233 .93556

 001-005 23 4 9 .20837 .21819 .00982 .01358 .01325 .95501 .93882

 GENOVA VERSION 3.1 PAGE 23

 CONTROL CARD INPUT LISTING

 COLUMN 11111111112222222222333333333344444444445555555555666666666677777777778

 12345678901234567890123456789012345678901234567890123456789012345678901234567890

 COMMENT D STUDY 2 VARYING THE NUMBER OF TASKS

 COMMENT

 DSTUDY P x T x J DESIGN

 DEFFECT $ P

 DEFFECT T 2 3 4 5

 DEFFECT J 9

 ENDDSTUDY

 GENOVA VERSION 3.1 PAGE 24

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-001

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 2 9

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 2 .00641 .00454 .01282 1.0000 2 .00641 .00454

 J .00481 1.0000 9 .00053 .00029 .00481 1.0000 9 .00053 .00029

 PT .03068 1.0000 2 .01534 .00284 .03068 1.0000 2 .01534 .00284

 PJ .01392 1.0000 9 .00155 .00023 .01392 1.0000 9 .00155 .00023

 TJ .00076 1.0000 18 .00004 .00003 .00076 1.0000 18 .00004 .00003

 PTJ .02165 1.0000 18 .00120 .00007 .02165 1.0000 18 .00120 .00007

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .22646 .47587 .06300

 LOWER CASE DELTA .01809 .13449 .00285 GENERALIZABILITY COEFFICIENT = .92013 (11.52009)

 UPPER CASE DELTA .02508 .15835 .00530 PHI = .89258 ( 8.30948)

 MEAN .01683 .12975

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 25

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-001

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000002 .0000206

 J .0000000 .0000000 .0000001

 PT -.0000040 -.0000004 .0000000 .0000081

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 26

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-002

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 3 9

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 3 .00427 .00303 .01282 1.0000 3 .00427 .00303

 J .00481 1.0000 9 .00053 .00029 .00481 1.0000 9 .00053 .00029

 PT .03068 1.0000 3 .01023 .00189 .03068 1.0000 3 .01023 .00189

 PJ .01392 1.0000 9 .00155 .00023 .01392 1.0000 9 .00155 .00023

 TJ .00076 1.0000 27 .00003 .00002 .00076 1.0000 27 .00003 .00002

 PTJ .02165 1.0000 27 .00080 .00005 .02165 1.0000 27 .00080 .00005

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .22094 .47005 .06299

 LOWER CASE DELTA .01257 .11213 .00191 GENERALIZABILITY COEFFICIENT = .94309 (16.57153)

 UPPER CASE DELTA .01741 .13195 .00354 PHI = .92288 (11.96746)

 MEAN .01444 .12018

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 27

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-002

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000092

 J .0000000 .0000000 .0000001

 PT -.0000027 -.0000002 .0000000 .0000036

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 28

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-003

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 9

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 4 .00321 .00227 .01282 1.0000 4 .00321 .00227

 J .00481 1.0000 9 .00053 .00029 .00481 1.0000 9 .00053 .00029

 PT .03068 1.0000 4 .00767 .00142 .03068 1.0000 4 .00767 .00142

 PJ .01392 1.0000 9 .00155 .00023 .01392 1.0000 9 .00155 .00023

 TJ .00076 1.0000 36 .00002 .00001 .00076 1.0000 36 .00002 .00001

 PTJ .02165 1.0000 36 .00060 .00004 .02165 1.0000 36 .00060 .00004

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .21819 .46710 .06298

 LOWER CASE DELTA .00982 .09908 .00144 GENERALIZABILITY COEFFICIENT = .95501 (21.22502)

 UPPER CASE DELTA .01358 .11653 .00267 PHI = .93882 (15.34504)

 MEAN .01325 .11510

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 29

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-003

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000051

 J .0000000 .0000000 .0000001

 PT -.0000020 -.0000001 .0000000 .0000020

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 30

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-004

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 5 9

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .20837 1.0000 1 .20837 .06300

 T .01282 1.0000 5 .00256 .00182 .01282 1.0000 5 .00256 .00182

 J .00481 1.0000 9 .00053 .00029 .00481 1.0000 9 .00053 .00029

 PT .03068 1.0000 5 .00614 .00114 .03068 1.0000 5 .00614 .00114

 PJ .01392 1.0000 9 .00155 .00023 .01392 1.0000 9 .00155 .00023

 TJ .00076 1.0000 45 .00002 .00001 .00076 1.0000 45 .00002 .00001

 PTJ .02165 1.0000 45 .00048 .00003 .02165 1.0000 45 .00048 .00003

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

 ----------------------------------------------------------------------------------------------------------------------------------

 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .20837 .45647 .06300

 EXPECTED OBSERVED SCORE .21653 .46533 .06299

 LOWER CASE DELTA .00816 .09035 .00116 GENERALIZABILITY COEFFICIENT = .96230 (25.52579)

 UPPER CASE DELTA .01128 .10620 .00215 PHI = .94865 (18.47327)

 MEAN .01253 .11194

 ----------------------------------------------------------------------------------------------------------------------------------

 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 31

 D STUDY P x T x J DESIGN

 D STUDY DESIGN NUMBER 002-004

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P T J PT PJ TJ PTJ

 P .0039692

 T .0000001 .0000033

 J .0000000 .0000000 .0000001

 PT -.0000016 -.0000001 .0000000 .0000013

 PJ -.0000001 .0000000 .0000000 .0000000 .0000001

 TJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 PTJ .0000000 .0000000 .0000000 .0000000 .0000000 .0000000 .0000000

 GENOVA VERSION 3.1 PAGE 32

 D STUDY P x T x J DESIGN

 SUMMARY OF D STUDY RESULTS FOR SET OF CONTROL CARDS NO. 002

 ---------------------------------------------------------------------------------------------------------------------------------

 V A R I A N C E S

 SAMPLE SIZES --------------------------------------------------------

 D STUDY ------------------------------------- EXPECTED LOWER UPPER

 DESIGN INDEX= $P T J UNIVERSE OBSERVED CASE CASE GEN.

 NO UNIV.= INF. INF. INF. SCORE SCORE DELTA DELTA MEAN COEF. PHI

 ---------------------------------------------------------------------------------------------------------------------------------

 002-001 23 2 9 .20837 .22646 .01809 .02508 .01683 .92013 .89258

 002-002 23 3 9 .20837 .22094 .01257 .01741 .01444 .94309 .92288

 002-003 23 4 9 .20837 .21819 .00982 .01358 .01325 .95501 .93882

 002-004 23 5 9 .20837 .21653 .00816 .01128 .01253 .96230 .94865

 GENOVA VERSION 3.1 PAGE 33

 CONTROL CARD INPUT LISTING

 COLUMN 11111111112222222222333333333344444444445555555555666666666677777777778

 12345678901234567890123456789012345678901234567890123456789012345678901234567890

 COMMENT D STUDY 3 VARYING THE NUMBER OF RATERS

 COMMENT

 DSTUDY P x T x J DESIGN; T FIXED

 DEFFECT $ P

 DEFFECT T 4 / 4

 DEFFECT J 1 3 5 7 9

 ENDDSTUDY

 GENOVA VERSION 3.1 PAGE 34

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-001

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : 4 INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 1

 ----------------------------------------------------------------------------------------------------------------------------------

 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

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 P .20837 1.0000 1 .20837 .06300 .21604 1.0000 1 .21604 .06299

 T .01282 1.0000 4 .00321 .00227 .01282QFM0000E+00 4 ------- -------

 J .00481 1.0000 1 .00481 .00262 .00501 1.0000 1 .00501 .00262

 PT .03068 1.0000 4 .00767 .00142 .03068 .0000E+00 4 ------- -------

 PJ .01392 1.0000 1 .01392 .00208 .01933 1.0000 1 .01933 .00205

 TJ .00076 1.0000 4 .00019 .00012 .00076 .0000E+00 4 ------- -------

 PTJ .02165 1.0000 4 .00541 .00033 .02165 .0000E+00 4 ------- -------

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 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .21604 .46480 .06299

 EXPECTED OBSERVED SCORE .23537 .48515 .06301

 LOWER CASE DELTA .01933 .13905 .00205 GENERALIZABILITY COEFFICIENT = .91786 (11.17422)

 UPPER CASE DELTA .02434 .15601 .00327 PHI = .89875 ( 8.87628)

 MEAN .01524 .12345

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 35

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-001

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P J PJ

 P .0039671

 J .0000000 .0000068

 PJ -.0000005 -.0000002 .0000042

 GENOVA VERSION 3.1 PAGE 36

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-002

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : 4 INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 3

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .21604 1.0000 1 .21604 .06299

 T .01282 1.0000 4 .00321 .00227 .01282QFM0000E+00 4 ------- -------

 J .00481 1.0000 3 .00160 .00087 .00501 1.0000 3 .00167 .00087

 PT .03068 1.0000 4 .00767 .00142 .03068 .0000E+00 4 ------- -------

 PJ .01392 1.0000 3 .00464 .00069 .01933 1.0000 3 .00644 .00068

 TJ .00076 1.0000 12 .00006 .00004 .00076 .0000E+00 12 ------- -------

 PTJ .02165 1.0000 12 .00180 .00011 .02165 .0000E+00 12 ------- -------

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 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .21604 .46480 .06299

 EXPECTED OBSERVED SCORE .22248 .47168 .06299

 LOWER CASE DELTA .00644 .08028 .00068 GENERALIZABILITY COEFFICIENT = .97103 (33.52267)

 UPPER CASE DELTA .00811 .09007 .00109 PHI = .96381 (26.62885)

 MEAN .01134 .10650

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 37

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-002

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P J PJ

 P .0039671

 J .0000000 .0000008

 PJ -.0000002 .0000000 .0000005

 GENOVA VERSION 3.1 PAGE 38

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-003

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : 4 INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 5

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .21604 1.0000 1 .21604 .06299

 T .01282 1.0000 4 .00321 .00227 .01282QFM0000E+00 4 ------- -------

 J .00481 1.0000 5 .00096 .00052 .00501 1.0000 5 .00100 .00052

 PT .03068 1.0000 4 .00767 .00142 .03068 .0000E+00 4 ------- -------

 PJ .01392 1.0000 5 .00278 .00042 .01933 1.0000 5 .00387 .00041

 TJ .00076 1.0000 20 .00004 .00002 .00076 .0000E+00 20 ------- -------

 PTJ .02165 1.0000 20 .00108 .00007 .02165 .0000E+00 20 ------- -------

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 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .21604 .46480 .06299

 EXPECTED OBSERVED SCORE .21990 .46894 .06299

 LOWER CASE DELTA .00387 .06218 .00041 GENERALIZABILITY COEFFICIENT = .98242 (55.87111)

 UPPER CASE DELTA .00487 .06977 .00065 PHI = .97796 (44.38141)

 MEAN .01056 .10277

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 39

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-003

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P J PJ

 P .0039671

 J .0000000 .0000003

 PJ -.0000001 .0000000 .0000002

 GENOVA VERSION 3.1 PAGE 40

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-004

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : 4 INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 7

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .21604 1.0000 1 .21604 .06299

 T .01282 1.0000 4 .00321 .00227 .01282QFM0000E+00 4 ------- -------

 J .00481 1.0000 7 .00069 .00037 .00501 1.0000 7 .00072 .00037

 PT .03068 1.0000 4 .00767 .00142 .03068 .0000E+00 4 ------- -------

 PJ .01392 1.0000 7 .00199 .00030 .01933 1.0000 7 .00276 .00029

 TJ .00076 1.0000 28 .00003 .00002 .00076 .0000E+00 28 ------- -------

 PTJ .02165 1.0000 28 .00077 .00005 .02165 .0000E+00 28 ------- -------

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 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .21604 .46480 .06299

 EXPECTED OBSERVED SCORE .21880 .46776 .06298

 LOWER CASE DELTA .00276 .05255 .00029 GENERALIZABILITY COEFFICIENT = .98738 (78.21955)

 UPPER CASE DELTA .00348 .05897 .00047 PHI = .98416 (62.13398)

 MEAN .01023 .10113

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 41

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-004

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P J PJ

 P .0039671

 J .0000000 .0000001

 PJ -.0000001 .0000000 .0000001

 GENOVA VERSION 3.1 PAGE 42

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-005

 OBJECT OF MEASUREMENT : P FACETS : T J

 G STUDY POPULATION SIZE : INFINITE G STUDY UNIVERSE SIZES : INFINITE INFINITE

 D STUDY POPULATION SIZE : INFINITE D STUDY UNIVERSE SIZES : 4 INFINITE

 D STUDY SAMPLE SIZE : 23 D STUDY SAMPLE SIZES : 4 9

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 VARIANCE COMPONENTS IN TERMS OF VARIANCE COMPONENTS IN TERMS OF

 G STUDY UNIVERSE (OF ADMISSIBLE OBSERVATIONS) SIZES D STUDY UNIVERSE (OF GENERALIZATION) SIZES

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 VARIANCE COMPONENTS VARIANCE COMPONENTS

 VARIANCE FINITE D STUDY FOR MEAN SCORES VARIANCE FINITE D STUDY FOR MEAN SCORES

 COMPONENTS UNIVERSE SAMPLING -------------------------- COMPONENTS UNIVERSE SAMPLING ---------------------------

 FOR SINGLE COR- FRE- STANDARD FOR SINGLE COR- FRE- STANDARD

 EFFECT OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS OBSERVATIONS RECTIONS QUENCIES ESTIMATES ERRORS

 ----------------------------------------------------------------------------------------------------------------------------------

 P .20837 1.0000 1 .20837 .06300 .21604 1.0000 1 .21604 .06299

 T .01282 1.0000 4 .00321 .00227 .01282QFM0000E+00 4 ------- -------

 J .00481 1.0000 9 .00053 .00029 .00501 1.0000 9 .00056 .00029

 PT .03068 1.0000 4 .00767 .00142 .03068 .0000E+00 4 ------- -------

 PJ .01392 1.0000 9 .00155 .00023 .01933 1.0000 9 .00215 .00023

 TJ .00076 1.0000 36 .00002 .00001 .00076 .0000E+00 36 ------- -------

 PTJ .02165 1.0000 36 .00060 .00004 .02165 .0000E+00 36 ------- -------

 ----------------------------------------------------------------------------------------------------------------------------------

 QFM = QUADRATIC FORM

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 STANDARD

 STANDARD ERROR OF

 VARIANCE DEVIATION VARIANCE

 UNIVERSE SCORE .21604 .46480 .06299

 EXPECTED OBSERVED SCORE .21819 .46710 .06298

 LOWER CASE DELTA .00215 .04635 .00023 GENERALIZABILITY COEFFICIENT = .99015 (\*\*\*\*\*\*\*\*)

 UPPER CASE DELTA .00270 .05200 .00036 PHI = .98764 (79.88655)

 MEAN .01004 .10021

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 NOTE: SIGNAL/NOISE RATIOS ARE IN PARENTHESES

 GENOVA VERSION 3.1 PAGE 43

 D STUDY P x T x J DESIGN; T FIXED

 D STUDY DESIGN NUMBER 003-005

 VARIANCE - COVARIANCE MATRIX FOR ESTIMATED VARIANCE COMPONENTS (FOR MEAN SCORES) IN UNIVERSE OF GENERALIZATION (W)

 P J PJ

 P .0039671

 J .0000000 .0000001

 PJ -.0000001 .0000000 .0000001

 GENOVA VERSION 3.1 PAGE 44

 D STUDY P x T x J DESIGN; T FIXED

 SUMMARY OF D STUDY RESULTS FOR SET OF CONTROL CARDS NO. 003

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 V A R I A N C E S

 SAMPLE SIZES --------------------------------------------------------

 D STUDY ------------------------------------- EXPECTED LOWER UPPER

 DESIGN INDEX= $P T J UNIVERSE OBSERVED CASE CASE GEN.

 NO UNIV.= INF. 4 INF. SCORE SCORE DELTA DELTA MEAN COEF. PHI

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 003-001 23 4 1 .21604 .23537 .01933 .02434 .01524 .91786 .89875

 003-002 23 4 3 .21604 .22248 .00644 .00811 .01134 .97103 .96381

 003-003 23 4 5 .21604 .21990 .00387 .00487 .01056 .98242 .97796

 003-004 23 4 7 .21604 .21880 .00276 .00348 .01023 .98738 .98416

 003-005 23 4 9 .21604 .21819 .00215 .00270 .01004 .99015 .98764

 GENOVA VERSION 3.1 PAGE 45

 CONTROL CARD INPUT LISTING

 COLUMN 11111111112222222222333333333344444444445555555555666666666677777777778

 12345678901234567890123456789012345678901234567890123456789012345678901234567890

 FINISH