**DATA** A;

INPUT BLK TRT $ SEVERITY;

PROP=SEVERITY/**100**;

SQRTPROP=SQRT(PROP);

ARCSEV=ARSIN(SQRTPROP);

LOGSEV=LOG(SEVERITY);

CARDS;

1 3 8

1 1 88

1 2 36

2 1 75

2 2 25

2 3 15

3 2 60

3 1 85

3 3 13

4 2 64

4 3 5

4 1 91

;

**PROC** **PRINT** DATA=A;

**PROC** **MIXED** COVTEST DATA=A;

CLASS BLK TRT;

MODEL SEVERITY=TRT/RESIDUAL;

RANDOM BLK;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=A;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=POISSON;

RANDOM BLK;

\*RANDOM \_RESIDUAL\_;

LSMEANS TRT/DIFF ILINK;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=A;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=NEGBIN;

RANDOM BLK;

LSMEANS TRT/DIFF ILINK;

**PROC** **MIXED** COVTEST DATA=A;

CLASS BLK TRT;

MODEL PROP=TRT/RESIDUAL;

RANDOM BLK;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=A;

CLASS BLK TRT;

MODEL PROP=TRT/DIST=BIN;

RANDOM BLK;

LSMEANS TRT/DIFF ILINK;

**PROC** **MIXED** COVTEST DATA=A;

CLASS BLK TRT;

MODEL ARCSEV=TRT/RESIDUAL;

RANDOM BLK;

LSMEANS TRT/DIFF;

**PROC** **MIXED** COVTEST DATA=A;

CLASS BLK TRT;

MODEL LOGSEV=TRT/RESIDUAL;

RANDOM BLK;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=A;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=LOGN;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF ILINK;

**RUN**;

**DATA** B;

INPUT BLK TRT $ SAMPLE SEVERITY;

PROP=SEVERITY/**100**;

SQRTPROP=SQRT(PROP);

ARCSEV=ARSIN(SQRTPROP);

LOGSEV=LOG(SEVERITY+**1**);

CARDS;

1 3 1 0

1 3 2 0

1 3 3 11

1 3 4 1

1 3 5 0

1 3 6 27

1 3 7 1

1 3 8 0

1 3 9 1

1 3 10 0

1 3 11 1

1 3 12 2

1 1 1 46

1 1 2 49

1 1 3 32

1 1 4 73

1 1 5 95

1 1 6 96

1 1 7 29

1 1 8 44

1 1 9 69

1 1 10 44

1 1 11 91

1 1 12 29

1 2 1 1

1 2 2 38

1 2 3 44

1 2 4 66

1 2 5 11

1 2 6 41

1 2 7 9

1 2 8 10

1 2 9 42

1 2 10 21

1 2 11 12

1 2 12 44

2 1 1 90

2 1 2 91

2 1 3 86

2 1 4 94

2 1 5 39

2 1 6 91

2 1 7 29

2 1 8 39

2 1 9 38

2 1 10 40

2 1 11 13

2 1 12 38

2 2 1 40

2 2 2 13

2 2 3 34

2 2 4 67

2 2 5 11

2 2 6 44

2 2 7 66

2 2 8 9

2 2 9 43

2 2 10 34

2 2 11 41

2 2 12 0

2 3 1 6

2 3 2 3

2 3 3 15

2 3 4 14

2 3 5 1

2 3 6 0

2 3 7 0

2 3 8 2

2 3 9 0

2 3 10 0

2 3 11 2

2 3 12 11

3 2 1 2

3 2 2 14

3 2 3 19

3 2 4 48

3 2 5 13

3 2 6 71

3 2 7 34

3 2 8 12

3 2 9 10

3 2 10 69

3 2 11 15

3 2 12 88

3 1 1 39

3 1 2 17

3 1 3 16

3 1 4 94

3 1 5 47

3 1 6 29

3 1 7 95

3 1 8 53

3 1 9 36

3 1 10 93

3 1 11 92

3 1 12 71

3 3 1 0

3 3 2 0

3 3 3 4

3 3 4 0

3 3 5 13

3 3 6 28

3 3 7 1

3 3 8 7

3 3 9 11

3 3 10 9

3 3 11 0

3 3 12 8

4 2 1 38

4 2 2 76

4 2 3 17

4 2 4 41

4 2 5 17

4 2 6 30

4 2 7 90

4 2 8 22

4 2 9 98

4 2 10 38

4 2 11 13

4 2 12 9

4 3 1 8

4 3 2 1

4 3 3 0

4 3 4 2

4 3 5 11

4 3 6 28

4 3 7 4

4 3 8 0

4 3 9 0

4 3 10 10

4 3 11 9

4 3 12 41

4 1 1 92

4 1 2 94

4 1 3 95

4 1 4 91

4 1 5 96

4 1 6 89

4 1 7 91

4 1 8 27

4 1 9 78

4 1 10 94

4 1 11 84

4 1 12 39

;

**PROC** **PRINT** DATA=B;

**PROC** **MIXED** COVTEST DATA=B;

CLASS BLK TRT;

MODEL SEVERITY=TRT/RESIDUAL;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=B;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=POISSON;

RANDOM BLK BLK\*TRT;

\*RANDOM \_RESIDUAL\_;

LSMEANS TRT/DIFF ILINK;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=B;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=NEGBIN;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF ILINK;

**PROC** **MIXED** COVTEST DATA=B;

CLASS BLK TRT;

MODEL PROP=TRT/RESIDUAL;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=B;

CLASS BLK TRT;

MODEL PROP=TRT/DIST=BIN;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF ILINK;

**PROC** **MIXED** COVTEST DATA=B;

CLASS BLK TRT;

MODEL ARCSEV=TRT/RESIDUAL;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF;

**PROC** **MIXED** COVTEST DATA=B;

CLASS BLK TRT;

MODEL LOGSEV=TRT/RESIDUAL;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF;

**PROC** **GLIMMIX** PLOTS=RESIDUALPANEL DATA=B;

CLASS BLK TRT;

MODEL SEVERITY=TRT/DIST=LOGN;

RANDOM BLK BLK\*TRT;

LSMEANS TRT/DIFF ILINK;

**RUN**;