NOTE AF: THE WILKINSON-SAWITSKI SERIES OF TESTS ON EXCEL 2007[1]

THE BASIC DATA SET[2]

Labels	X	ZERO	MISS	BIG	LITTLE	HUGE	TINY	ROUND
ONE	1	0		99999991	0.99999991	1E+12	1E-12	0.5
TWO	2	0		99999992	0.99999992	2E+12	2E-12	1.5
THREE	3	0		99999993	0.99999993	3E+12	3E-12	2.5
FOUR	4	0		99999994	0.99999994	4E+12	4E-12	3.5
FIVE	5	0		99999995	0.99999995	5E+12	5E-12	4.5
SIX	6	0		99999996	0.99999996	6E+12	6E-12	5.5
SEVEN	7	0		99999997	0.99999997	7E+12	7E-12	6.5
EIGHT	8	0		99999998	0.99999998	8E+12	8E-12	7.5
NINE	9	0		99999999	0.99999999	9E+12	9E-12	8.5

MISS represents blank cells (no data)

THE TEST EXERCISES

II.A PRINT ROUND WITH ONLY ONE DIGIT

1

2

3

4

5

6

7

8

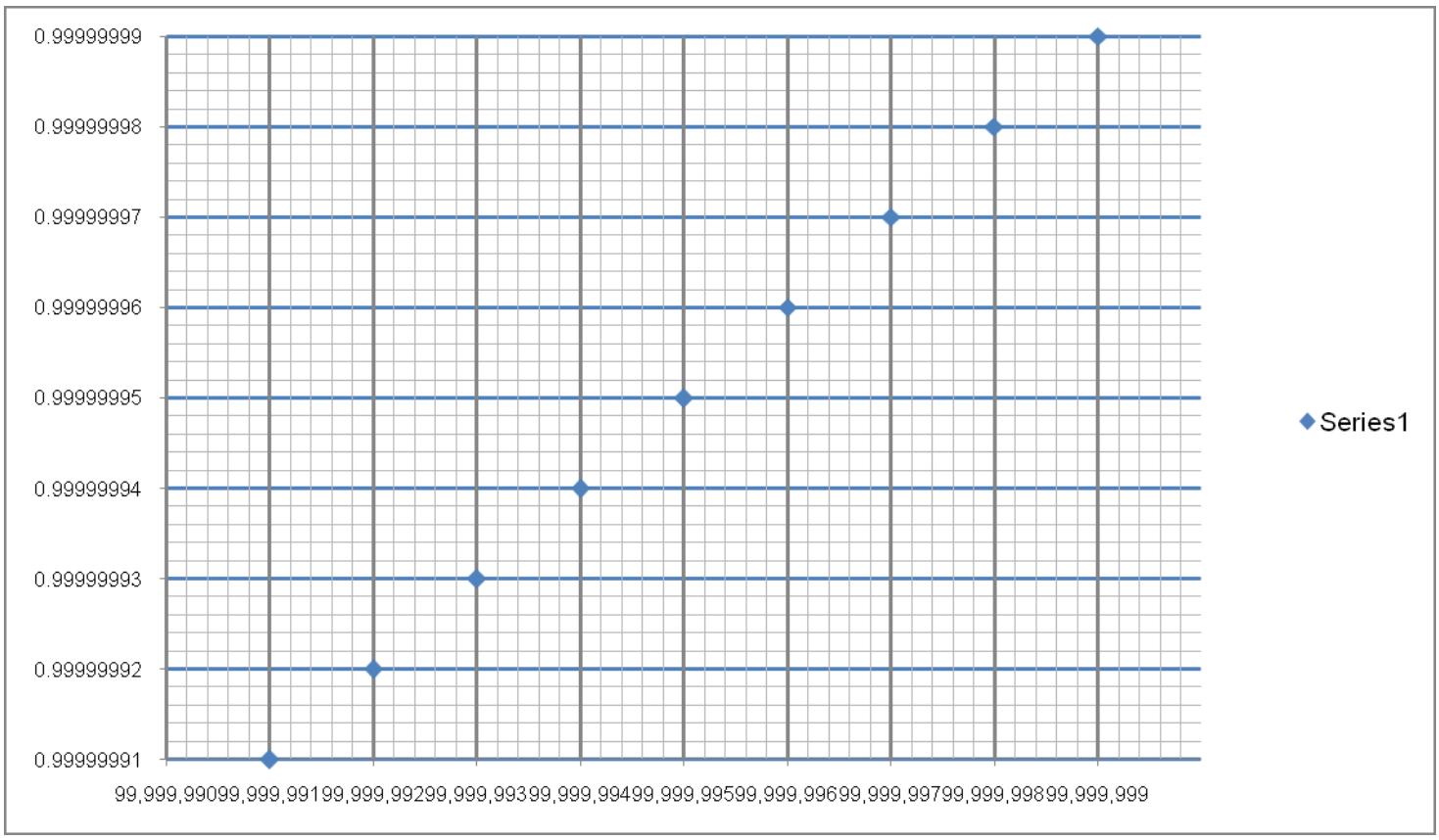
9

PASS

[1] Described in Sawitzki 1994. He combined the Wilkinson 1985 series of tests with some additional tests to form a suite of four problems.

[2] This is Wilkinson'd (1985) basic test data set.

II.B PLOT HUGE AGAINST TINY IN A SCATTER PLOT



PASS

II.C COMPUTE BASIC STATISTICS ON ALL VARIABLES

LRE Values

	X	ZERO	BIG	LITTLE	HUGE	TINY	ROUND
Means	16	16	16	16	16	16	16
Standard Deviation	15.79	16	15.79	9.28	15.75	16	15.79

PASS

II.D COMPUTE THE CORRELATION MATRIX ON ALL VARIABLES

Excel cells too big to show. All cells were 1.000000000000000E+00

PASS

II.E TABULATE X AGAINST X, USING BIG AS A CASE WEIGHT.

No corresponding Excel function. Nothing to test.

II.F REGRESS BIG ON X

LINEST

1.000000000000000E+00	9.999999000000000E+07
3.846881557085040E-17	2.164761174550900E-16
1.000000000000000E+00	2.979781641084560E-16
6.757442676344590E+32	7.000000000000000E+00
6.000000000000000E+01	6.215369039981220E-31

BIG = 9.999999000000 + 1.000000000000000 * X

PASS

III THE MISS TESTS.

Blank cells in Excel result in error outputs. Can't test.

IV.A REGRESS X ON X^2, X^3 …….. X^9

Regression coefficients

SAWITZKI	EXCEL 2007 LINEST
3.534860E-01	3.534857623781990E-01
1.142340E+00	1.142341141812520E+00
-7.049450E-01	-7.049453717944300E-01
2.623530E-01	2.623527142625080E-01
-6.163500E-02	-6.163498854332120E-02
9.205360E-03	9.205358395061110E-03
-8.474770E-04	-8.474774395400420E-04
4.383500E-05	4.383503997595070E-05
-9.741120E-07	-9.741119994602610E-07

No essential differences

PASS

IV.B REGRESS X ON X.

LINEST Output

1.000000000000000E+00	8.881784197001250E-16
3.846881557085040E-17	2.164761174550900E-16
1.000000000000000E+00	2.979781641084560E-16
6.757442676344590E+32	7.000000000000000E+00
6.000000000000000E+01	6.215369039981220E-31

X = 2.16476E-16 +1.0000000000000 * X

PASS

IV.C REGRESS X ON (BIG, LITTLE)

LINEST Output

0.000000000000000E+00	1.000000000000000E+00	-9.999999000000000E+07
0.000000000000000E+00	3.846881557085040E-17	3.846881364740960E-09
1.000000000000000E+00	2.979781641084560E-16	#N/A
6.757442676344590E+32	7.000000000000000E+00	#N/A
6.000000000000000E+01	6.215369039981220E-31	#N/A

The data set has a singularity because BIG and LITTLE are linearly dependent. The Excel LINEST function recognizes this singularity and sets the coefficient of one of them to zero. In this case it regressed on LITTLE

PASS

IV.D REGRESS ZERO ON X.

LINEST Output

0.000000000000000E+00	0.000000000000000E+00
0.000000000000000E+00	0.000000000000000E+00
1.000000000000000E+00	0.000000000000000E+00
#NUM!	7.000000000000000E+00
0.000000000000000E+00	0.000000000000000E+00

Both coefficients are zero

PASS

IV.E REGRESS X ON X2 TO X9 BUT USING THE REGRESSORS IN A PERMUTED ORDER.

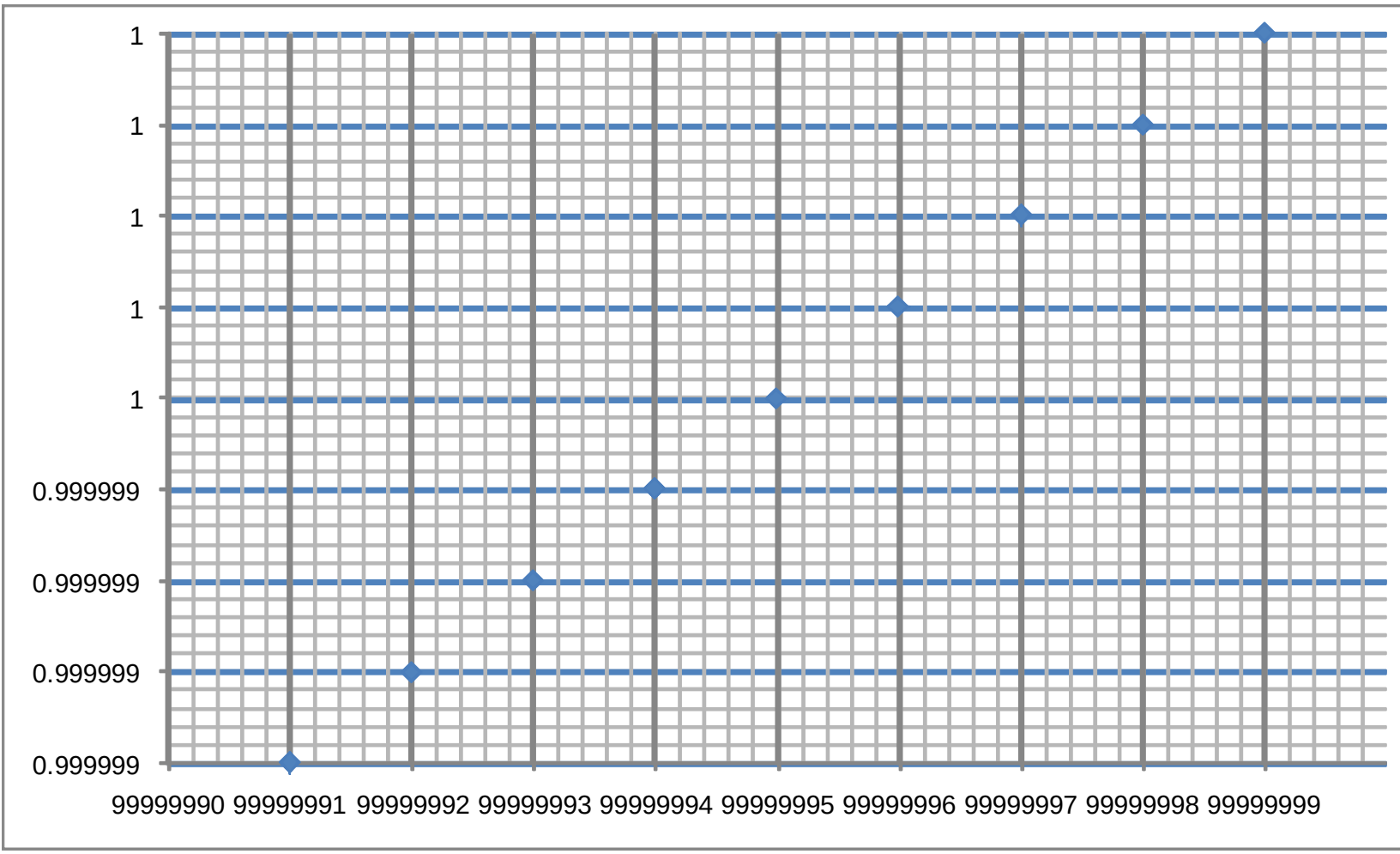
Order	Variable	Permuted Value	Original value	LRE
	cons	3.534857623782270E-01	3.534857623781990E-01	13.09
1	X^8	4.383503997595070E-05	4.383503997595070E-05	16.00
2	X^9	-9.741119994602610E-07	-9.741119994602610E-07	16.00
3	X^4	2.623527142625080E-01	2.623527142625080E-01	16.00
4	X^5	-6.163498854332120E-02	-6.163498854332120E-02	16.00
5	X^2	1.142341141812520E+00	1.142341141812520E+00	16.00
6	V^3	-7.049453717944300E-01	-7.049453717944300E-01	16.00
7	X^6	9.205358395061110E-03	9.205358395061110E-03	16.00
8	X^7	-8.474774395400420E-04	-8.474774395400420E-04	16.00

No essential difference

PASS

CONCLUSIONS

Excel 2007 passed all tests.


1
1
1
1
1
0.999999
0.999999
0.999999
0.999999
99999990 99999991 99999992 99999993 99999994 99999995 99999996 99999997 99999998 99999999