

The Mixed Procedure

Model Information	
Data Set	WORK.MYDATA4
Dependent Variable	diameter
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
blocks	3	1 2 3
geo_num	10	1 2 3 4 5 6 7 8 9 10
origin	2	Intro Nat

Dimensions	
Covariance Parameters	3
Columns in X	31
Columns in Z	33
Subjects	1
Max Obs per Subject	59

Number of Observations	
Number of Observations Read	240
Number of Observations Used	59
Number of Observations Not Used	181

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	378.89508310	
1	3	376.34792182	0.00007879
2	1	376.33483900	0.00000276
3	1	376.33441223	0.00000001

Convergence criteria met.

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Covariance Parameter Estimates	
Cov Parm	Estimate
blocks	46.7901
blocks*geo_num	72.4708
Residual	300.94

Fit Statistics	
-2 Res Log Likelihood	376.3
AIC (Smaller is Better)	382.3
AICC (Smaller is Better)	383.0
BIC (Smaller is Better)	379.6

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
geo_num	9	10	1.12	0.4276
origin	1	29	1.22	0.2791
geo_num*origin	7	29	1.50	0.2077

Least Squares Means							
Effect	origin	geo_num	Estimate	Standard Error	DF	t Value	Pr > |t|
geo_num		1	Non-est	.	.	.	.
geo_num		2	106.89	10.0286	10	10.66	<.0001
geo_num		3	90.1971	10.3791	10	8.69	<.0001
geo_num		4	96.6428	10.0286	10	9.64	<.0001
geo_num		5	103.39	10.0286	10	10.31	<.0001
geo_num		6	103.02	10.0286	10	10.27	<.0001
geo_num		7	Non-est	.	.	.	.
geo_num		8	94.1428	10.0286	10	9.39	<.0001
geo_num		9	110.27	10.0286	10	11.00	<.0001
geo_num		10	122.27	10.0286	10	12.19	<.0001
origin	Intro		Non-est	.	.	.	.
origin	Nat		Non-est	.	.	.	.
geo_num*origin	Nat	1	111.83	9.4821	29	11.79	<.0001
geo_num*origin	Intro	2	98.7145	11.5134	29	8.57	<.0001
geo_num*origin	Nat	2	115.07	16.1402	29	7.13	<.0001
geo_num*origin	Intro	3	99.3232	12.6954	29	7.82	<.0001

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Least Squares Means							
Effect	origin	geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	Nat	3	81.0710	16.1402	29	5.02	<.0001
geo_num*origin	Intro	4	103.71	11.5134	29	9.01	<.0001
geo_num*origin	Nat	4	89.5710	16.1402	29	5.55	<.0001
geo_num*origin	Intro	5	122.07	16.1402	29	7.56	<.0001
geo_num*origin	Nat	5	84.7145	11.5134	29	7.36	<.0001
geo_num*origin	Intro	6	99.0710	16.1402	29	6.14	<.0001
geo_num*origin	Nat	6	106.96	11.5134	29	9.29	<.0001
geo_num*origin	Intro	7	106.00	9.4821	29	11.18	<.0001
geo_num*origin	Intro	8	111.57	16.1402	29	6.91	<.0001
geo_num*origin	Nat	8	76.7145	11.5134	29	6.66	<.0001
geo_num*origin	Intro	9	99.0710	16.1402	29	6.14	<.0001
geo_num*origin	Nat	9	121.46	11.5134	29	10.55	<.0001
geo_num*origin	Intro	10	121.96	11.5134	29	10.59	<.0001
geo_num*origin	Nat	10	122.57	16.1402	29	7.59	<.0001

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num		1		2	Non-est	.	.	.	.
geo_num		1		3	Non-est	.	.	.	.
geo_num		1		4	Non-est	.	.	.	.
geo_num		1		5	Non-est	.	.	.	.
geo_num		1		6	Non-est	.	.	.	.
geo_num		1		7	Non-est	.	.	.	.
geo_num		1		8	Non-est	.	.	.	.
geo_num		1		9	Non-est	.	.	.	.
geo_num		1		10	Non-est	.	.	.	.
geo_num		2		3	16.6957	13.2045	10	1.26	0.2348
geo_num		2		4	10.2500	12.9307	10	0.79	0.4464
geo_num		2		5	3.5000	12.9307	10	0.27	0.7921
geo_num		2		6	3.8750	12.9307	10	0.30	0.7706
geo_num		2		7	Non-est	.	.	.	.
geo_num		2		8	12.7500	12.9307	10	0.99	0.3474
geo_num		2		9	-3.3750	12.9307	10	-0.26	0.7994
geo_num		2		10	-15.3750	12.9307	10	-1.19	0.2619
geo_num		3		4	-6.4457	13.2045	10	-0.49	0.6360
geo_num		3		5	-13.1957	13.2045	10	-1.00	0.3412
geo_num		3		6	-12.8207	13.2045	10	-0.97	0.3545
geo_num		3		7	Non-est	.	.	.	.
geo_num		3		8	-3.9457	13.2045	10	-0.30	0.7712
geo_num		3		9	-20.0707	13.2045	10	-1.52	0.1595
geo_num		3		10	-32.0707	13.2045	10	-2.43	0.0355
geo_num		4		5	-6.7500	12.9307	10	-0.52	0.6130
geo_num		4		6	-6.3750	12.9307	10	-0.49	0.6327
geo_num		4		7	Non-est	.	.	.	.
geo_num		4		8	2.5000	12.9307	10	0.19	0.8506
geo_num		4		9	-13.6250	12.9307	10	-1.05	0.3168
geo_num		4		10	-25.6250	12.9307	10	-1.98	0.0757
geo_num		5		6	0.3750	12.9307	10	0.03	0.9774
geo_num		5		7	Non-est	.	.	.	.
geo_num		5		8	9.2500	12.9307	10	0.72	0.4908
geo_num		5		9	-6.8750	12.9307	10	-0.53	0.6066
geo_num		5		10	-18.8750	12.9307	10	-1.46	0.1751

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num		6		7	Non-est	.	.	.	.
geo_num		6		8	8.8750	12.9307	10	0.69	0.5081
geo_num		6		9	-7.2500	12.9307	10	-0.56	0.5874
geo_num		6		10	-19.2500	12.9307	10	-1.49	0.1674
geo_num		7		8	Non-est	.	.	.	.
geo_num		7		9	Non-est	.	.	.	.
geo_num		7		10	Non-est	.	.	.	.
geo_num		8		9	-16.1250	12.9307	10	-1.25	0.2408
geo_num		8		10	-28.1250	12.9307	10	-2.18	0.0547
geo_num		9		10	-12.0000	12.9307	10	-0.93	0.3753
origin	Intro		Nat		Non-est	.	.	.	.
geo_num*origin	Nat	1	Intro	2	13.1188	13.8302	29	0.95	0.3507
geo_num*origin	Nat	1	Nat	2	-3.2377	17.8668	29	-0.18	0.8575
geo_num*origin	Nat	1	Intro	3	12.5101	14.8287	29	0.84	0.4058
geo_num*origin	Nat	1	Nat	3	30.7623	17.8668	29	1.72	0.0958
geo_num*origin	Nat	1	Intro	4	8.1188	13.8302	29	0.59	0.5617
geo_num*origin	Nat	1	Nat	4	22.2623	17.8668	29	1.25	0.2227
geo_num*origin	Nat	1	Intro	5	-10.2377	17.8668	29	-0.57	0.5711
geo_num*origin	Nat	1	Nat	5	27.1188	13.8302	29	1.96	0.0596
geo_num*origin	Nat	1	Intro	6	12.7623	17.8668	29	0.71	0.4807
geo_num*origin	Nat	1	Nat	6	4.8688	13.8302	29	0.35	0.7274
geo_num*origin	Nat	1	Intro	7	5.8333	12.1912	29	0.48	0.6359
geo_num*origin	Nat	1	Intro	8	0.2623	17.8668	29	0.01	0.9884
geo_num*origin	Nat	1	Nat	8	35.1188	13.8302	29	2.54	0.0167
geo_num*origin	Nat	1	Intro	9	12.7623	17.8668	29	0.71	0.4807
geo_num*origin	Nat	1	Nat	9	-9.6312	13.8302	29	-0.70	0.4917
geo_num*origin	Nat	1	Intro	10	-10.1312	13.8302	29	-0.73	0.4697
geo_num*origin	Nat	1	Nat	10	-10.7377	17.8668	29	-0.60	0.5525
geo_num*origin	Intro	2	Nat	2	-16.3565	19.5919	29	-0.83	0.4106
geo_num*origin	Intro	2	Intro	3	-0.6087	15.8604	29	-0.04	0.9696
geo_num*origin	Intro	2	Nat	3	17.6435	19.5919	29	0.90	0.3752
geo_num*origin	Intro	2	Intro	4	-5.0000	14.9311	29	-0.33	0.7401
geo_num*origin	Intro	2	Nat	4	9.1435	19.5919	29	0.47	0.6442
geo_num*origin	Intro	2	Intro	5	-23.3565	19.5919	29	-1.19	0.2429
geo_num*origin	Intro	2	Nat	5	14.0000	14.9311	29	0.94	0.3562

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	Intro	2	Intro	6	-0.3565	19.5919	29	-0.02	0.9856
geo_num*origin	Intro	2	Nat	6	-8.2500	14.9311	29	-0.55	0.5848
geo_num*origin	Intro	2	Intro	7	-7.2855	13.8302	29	-0.53	0.6024
geo_num*origin	Intro	2	Intro	8	-12.8565	19.5919	29	-0.66	0.5169
geo_num*origin	Intro	2	Nat	8	22.0000	14.9311	29	1.47	0.1514
geo_num*origin	Intro	2	Intro	9	-0.3565	19.5919	29	-0.02	0.9856
geo_num*origin	Intro	2	Nat	9	-22.7500	14.9311	29	-1.52	0.1384
geo_num*origin	Intro	2	Intro	10	-23.2500	14.9311	29	-1.56	0.1303
geo_num*origin	Intro	2	Nat	10	-23.8565	19.5919	29	-1.22	0.2332
geo_num*origin	Nat	2	Intro	3	15.7478	20.3090	29	0.78	0.4444
geo_num*origin	Nat	2	Nat	3	34.0000	21.1158	29	1.61	0.1182
geo_num*origin	Nat	2	Intro	4	11.3565	19.5919	29	0.58	0.5666
geo_num*origin	Nat	2	Nat	4	25.5000	21.1158	29	1.21	0.2369
geo_num*origin	Nat	2	Intro	5	-7.0000	21.1158	29	-0.33	0.7426
geo_num*origin	Nat	2	Nat	5	30.3565	19.5919	29	1.55	0.1321
geo_num*origin	Nat	2	Intro	6	16.0000	21.1158	29	0.76	0.4547
geo_num*origin	Nat	2	Nat	6	8.1065	19.5919	29	0.41	0.6821
geo_num*origin	Nat	2	Intro	7	9.0710	17.8668	29	0.51	0.6155
geo_num*origin	Nat	2	Intro	8	3.5000	21.1158	29	0.17	0.8695
geo_num*origin	Nat	2	Nat	8	38.3565	19.5919	29	1.96	0.0599
geo_num*origin	Nat	2	Intro	9	16.0000	21.1158	29	0.76	0.4547
geo_num*origin	Nat	2	Nat	9	-6.3935	19.5919	29	-0.33	0.7465
geo_num*origin	Nat	2	Intro	10	-6.8935	19.5919	29	-0.35	0.7275
geo_num*origin	Nat	2	Nat	10	-7.5000	21.1158	29	-0.36	0.7250
geo_num*origin	Intro	3	Nat	3	18.2522	20.3090	29	0.90	0.3762
geo_num*origin	Intro	3	Intro	4	-4.3913	15.8604	29	-0.28	0.7838
geo_num*origin	Intro	3	Nat	4	9.7522	20.3090	29	0.48	0.6347
geo_num*origin	Intro	3	Intro	5	-22.7478	20.3090	29	-1.12	0.2719
geo_num*origin	Intro	3	Nat	5	14.6087	15.8604	29	0.92	0.3646
geo_num*origin	Intro	3	Intro	6	0.2522	20.3090	29	0.01	0.9902
geo_num*origin	Intro	3	Nat	6	-7.6413	15.8604	29	-0.48	0.6336
geo_num*origin	Intro	3	Intro	7	-6.6768	14.8287	29	-0.45	0.6559
geo_num*origin	Intro	3	Intro	8	-12.2478	20.3090	29	-0.60	0.5511
geo_num*origin	Intro	3	Nat	8	22.6087	15.8604	29	1.43	0.1647
geo_num*origin	Intro	3	Intro	9	0.2522	20.3090	29	0.01	0.9902

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	Intro	3	Nat	9	-22.1413	15.8604	29	-1.40	0.1733
geo_num*origin	Intro	3	Intro	10	-22.6413	15.8604	29	-1.43	0.1641
geo_num*origin	Intro	3	Nat	10	-23.2478	20.3090	29	-1.14	0.2617
geo_num*origin	Nat	3	Intro	4	-22.6435	19.5919	29	-1.16	0.2572
geo_num*origin	Nat	3	Nat	4	-8.5000	21.1158	29	-0.40	0.6902
geo_num*origin	Nat	3	Intro	5	-41.0000	21.1158	29	-1.94	0.0619
geo_num*origin	Nat	3	Nat	5	-3.6435	19.5919	29	-0.19	0.8538
geo_num*origin	Nat	3	Intro	6	-18.0000	21.1158	29	-0.85	0.4010
geo_num*origin	Nat	3	Nat	6	-25.8935	19.5919	29	-1.32	0.1966
geo_num*origin	Nat	3	Intro	7	-24.9290	17.8668	29	-1.40	0.1735
geo_num*origin	Nat	3	Intro	8	-30.5000	21.1158	29	-1.44	0.1593
geo_num*origin	Nat	3	Nat	8	4.3565	19.5919	29	0.22	0.8256
geo_num*origin	Nat	3	Intro	9	-18.0000	21.1158	29	-0.85	0.4010
geo_num*origin	Nat	3	Nat	9	-40.3935	19.5919	29	-2.06	0.0483
geo_num*origin	Nat	3	Intro	10	-40.8935	19.5919	29	-2.09	0.0458
geo_num*origin	Nat	3	Nat	10	-41.5000	21.1158	29	-1.97	0.0590
geo_num*origin	Intro	4	Nat	4	14.1435	19.5919	29	0.72	0.4761
geo_num*origin	Intro	4	Intro	5	-18.3565	19.5919	29	-0.94	0.3565
geo_num*origin	Intro	4	Nat	5	19.0000	14.9311	29	1.27	0.2133
geo_num*origin	Intro	4	Intro	6	4.6435	19.5919	29	0.24	0.8143
geo_num*origin	Intro	4	Nat	6	-3.2500	14.9311	29	-0.22	0.8292
geo_num*origin	Intro	4	Intro	7	-2.2855	13.8302	29	-0.17	0.8699
geo_num*origin	Intro	4	Intro	8	-7.8565	19.5919	29	-0.40	0.6914
geo_num*origin	Intro	4	Nat	8	27.0000	14.9311	29	1.81	0.0809
geo_num*origin	Intro	4	Intro	9	4.6435	19.5919	29	0.24	0.8143
geo_num*origin	Intro	4	Nat	9	-17.7500	14.9311	29	-1.19	0.2442
geo_num*origin	Intro	4	Intro	10	-18.2500	14.9311	29	-1.22	0.2314
geo_num*origin	Intro	4	Nat	10	-18.8565	19.5919	29	-0.96	0.3438
geo_num*origin	Nat	4	Intro	5	-32.5000	21.1158	29	-1.54	0.1346
geo_num*origin	Nat	4	Nat	5	4.8565	19.5919	29	0.25	0.8060
geo_num*origin	Nat	4	Intro	6	-9.5000	21.1158	29	-0.45	0.6561
geo_num*origin	Nat	4	Nat	6	-17.3935	19.5919	29	-0.89	0.3820
geo_num*origin	Nat	4	Intro	7	-16.4290	17.8668	29	-0.92	0.3654
geo_num*origin	Nat	4	Intro	8	-22.0000	21.1158	29	-1.04	0.3061
geo_num*origin	Nat	4	Nat	8	12.8565	19.5919	29	0.66	0.5169

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	Nat	4	Intro	9	-9.5000	21.1158	29	-0.45	0.6561
geo_num*origin	Nat	4	Nat	9	-31.8935	19.5919	29	-1.63	0.1144
geo_num*origin	Nat	4	Intro	10	-32.3935	19.5919	29	-1.65	0.1090
geo_num*origin	Nat	4	Nat	10	-33.0000	21.1158	29	-1.56	0.1289
geo_num*origin	Intro	5	Nat	5	37.3565	19.5919	29	1.91	0.0665
geo_num*origin	Intro	5	Intro	6	23.0000	21.1158	29	1.09	0.2850
geo_num*origin	Intro	5	Nat	6	15.1065	19.5919	29	0.77	0.4469
geo_num*origin	Intro	5	Intro	7	16.0710	17.8668	29	0.90	0.3758
geo_num*origin	Intro	5	Intro	8	10.5000	21.1158	29	0.50	0.6228
geo_num*origin	Intro	5	Nat	8	45.3565	19.5919	29	2.32	0.0279
geo_num*origin	Intro	5	Intro	9	23.0000	21.1158	29	1.09	0.2850
geo_num*origin	Intro	5	Nat	9	0.6065	19.5919	29	0.03	0.9755
geo_num*origin	Intro	5	Intro	10	0.1065	19.5919	29	0.01	0.9957
geo_num*origin	Intro	5	Nat	10	-0.5000	21.1158	29	-0.02	0.9813
geo_num*origin	Nat	5	Intro	6	-14.3565	19.5919	29	-0.73	0.4696
geo_num*origin	Nat	5	Nat	6	-22.2500	14.9311	29	-1.49	0.1470
geo_num*origin	Nat	5	Intro	7	-21.2855	13.8302	29	-1.54	0.1346
geo_num*origin	Nat	5	Intro	8	-26.8565	19.5919	29	-1.37	0.1810
geo_num*origin	Nat	5	Nat	8	8.0000	14.9311	29	0.54	0.5962
geo_num*origin	Nat	5	Intro	9	-14.3565	19.5919	29	-0.73	0.4696
geo_num*origin	Nat	5	Nat	9	-36.7500	14.9311	29	-2.46	0.0200
geo_num*origin	Nat	5	Intro	10	-37.2500	14.9311	29	-2.49	0.0185
geo_num*origin	Nat	5	Nat	10	-37.8565	19.5919	29	-1.93	0.0631
geo_num*origin	Intro	6	Nat	6	-7.8935	19.5919	29	-0.40	0.6900
geo_num*origin	Intro	6	Intro	7	-6.9290	17.8668	29	-0.39	0.7010
geo_num*origin	Intro	6	Intro	8	-12.5000	21.1158	29	-0.59	0.5585
geo_num*origin	Intro	6	Nat	8	22.3565	19.5919	29	1.14	0.2632
geo_num*origin	Intro	6	Intro	9	0	21.1158	29	0.00	1.0000
geo_num*origin	Intro	6	Nat	9	-22.3935	19.5919	29	-1.14	0.2624
geo_num*origin	Intro	6	Intro	10	-22.8935	19.5919	29	-1.17	0.2521
geo_num*origin	Intro	6	Nat	10	-23.5000	21.1158	29	-1.11	0.2749
geo_num*origin	Nat	6	Intro	7	0.9645	13.8302	29	0.07	0.9449
geo_num*origin	Nat	6	Intro	8	-4.6065	19.5919	29	-0.24	0.8158
geo_num*origin	Nat	6	Nat	8	30.2500	14.9311	29	2.03	0.0521
geo_num*origin	Nat	6	Intro	9	7.8935	19.5919	29	0.40	0.6900

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Differences of Least Squares Means									
Effect	origin	geo_num	_origin	_geo_num	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	Nat	6	Nat	9	-14.5000	14.9311	29	-0.97	0.3395
geo_num*origin	Nat	6	Intro	10	-15.0000	14.9311	29	-1.00	0.3234
geo_num*origin	Nat	6	Nat	10	-15.6065	19.5919	29	-0.80	0.4322
geo_num*origin	Intro	7	Intro	8	-5.5710	17.8668	29	-0.31	0.7574
geo_num*origin	Intro	7	Nat	8	29.2855	13.8302	29	2.12	0.0429
geo_num*origin	Intro	7	Intro	9	6.9290	17.8668	29	0.39	0.7010
geo_num*origin	Intro	7	Nat	9	-15.4645	13.8302	29	-1.12	0.2727
geo_num*origin	Intro	7	Intro	10	-15.9645	13.8302	29	-1.15	0.2578
geo_num*origin	Intro	7	Nat	10	-16.5710	17.8668	29	-0.93	0.3613
geo_num*origin	Intro	8	Nat	8	34.8565	19.5919	29	1.78	0.0857
geo_num*origin	Intro	8	Intro	9	12.5000	21.1158	29	0.59	0.5585
geo_num*origin	Intro	8	Nat	9	-9.8935	19.5919	29	-0.50	0.6174
geo_num*origin	Intro	8	Intro	10	-10.3935	19.5919	29	-0.53	0.5998
geo_num*origin	Intro	8	Nat	10	-11.0000	21.1158	29	-0.52	0.6064
geo_num*origin	Nat	8	Intro	9	-22.3565	19.5919	29	-1.14	0.2632
geo_num*origin	Nat	8	Nat	9	-44.7500	14.9311	29	-3.00	0.0055
geo_num*origin	Nat	8	Intro	10	-45.2500	14.9311	29	-3.03	0.0051
geo_num*origin	Nat	8	Nat	10	-45.8565	19.5919	29	-2.34	0.0263
geo_num*origin	Intro	9	Nat	9	-22.3935	19.5919	29	-1.14	0.2624
geo_num*origin	Intro	9	Intro	10	-22.8935	19.5919	29	-1.17	0.2521
geo_num*origin	Intro	9	Nat	10	-23.5000	21.1158	29	-1.11	0.2749
geo_num*origin	Nat	9	Intro	10	-0.5000	14.9311	29	-0.03	0.9735
geo_num*origin	Nat	9	Nat	10	-1.1065	19.5919	29	-0.06	0.9553
geo_num*origin	Intro	10	Nat	10	-0.6065	19.5919	29	-0.03	0.9755