LAMPIRAN A

Lampiran A.1

Di bawah ini merupakan tabel data penjualan rokok Hanisa Alami di wilayah Pasuruan, Malang, dan Batu (satuan bal).

Bulan	Tanggal	PASURUAN	MALANG	BATU
September 2006	1	56	25	20
	2	2	82	17
	3	17	75	96
	4	89	52	60
	5	36	51	5
	6	35	15	35
	7	10	17	70
	8	3	3	50
	9	7	20	40
	10	8	19	78
	11	12	22	15
	12	11	41	42
	13	35	27	86
	14	27	26	50
	15	34	10	51
	16	37	8	100
	17	2	40	55
	18	9	138	70
	19	19	162	130
	20	3	143	45
	21	6	97	33
	22	17	33	34
	23	54	82	60
	24	89	30	3
	25	34	20	30
	26	67	37	45
	27	114	57	57
	28	75	46	6
	29	147	5	5
	30	140	9	40
Oktober 2006	1	81	19	43
	2	77	56	55
	3	35	69	23
	4	19	43	43
	5	44	78	20
	6	8	75	89
	7	46	93	20
	8	38	74	29
	9	121	138	89
	10	104	58	90
	11	146	63	61

	12	53	46	22
	13	95	34	37
	14	91	11	34
	15	63	13	5
	16	27	2	31
	17	7	35	27
	18	27	123	60
	19	4	41	90
	20	18	39	67
	21	22	42	30
	22	47	28	29
	23	36	22	39
	24	8	13	45
	25	14	26	8
	26	18	38	9
	27	7	79	29
	28	46	100	71
	29	37	96	18
	30	34	166	95
	31	10	67	97
Nopember 2006	1	6	15	42
	2	20	27	45
	3	85	22	67
	4	2	10	63
	5	8	21	98
	6	14	64	76
	7	20	61	50
	8	30	60	37
	9	20	45	10
	10	67	43	15
	11	72	20	42
	12	78	10	67
	13	20	91	75
	14	43	40	23
	15	45	50	26
	16	60	51	91
	17	90	52	6
	18	115	110	69
	19	78	107	45
	20	3	94	67
	21	56	99	33
	22	70	77	90
	23	115	19	100
	24	200	70	107
	25	167	23	102
	26	77	42	15
	27	17	3	58
	28	33	3	24
	29	24	5	106
	30	19	5	79

Desember 2006	1	105	95	57
	2	195	20	45
	3	126	29	39
	4	36	46	57
	5	23	30	70
	6	102	27	32
	7	57	12	17
	8	133	106	45
	9	95	102	46
	10	91	23	13
	11	90	34	15
	12	56	55	85
	13	30	43	25
	14	35	76	117
	15	80	80	116
	16	20	4	50
	17	27	8	109
	18	27	18	111
	19	37	39	38
	20	19	16	32
	21	88	29	64
	22	105	110	28
	23	116	35	78
	24	29	20	79
	25	3	39	45
	26	17	41	55
	27	79	30	88
	28	34	28	19
	29	103	30	17
	30	160	32	3
	31	9	37	68
Januari 2007	1	28	35	98
	2	98	61	23
	3	63	28	30
	4	68	15	55
	5	90	10	15
	6	21	105	89
	7	27	29	45
	8	120	78	30
	9	187	122	13
	10	211	29	55
	11	178	35	65
	12	201	20	35
	13	190	78	36
	14	86	114	45
	15	105	58	45
	16	77	5	63
	17	117	32	28
	18	167	20	11
	19	37	33	56

	20	59	62	74
	21	67	18	10
	22	49	19	25
	23	40	60	40
	24	42	44	78
	25	106	30	112
	26	178	30	69
	27	217	23	60
	28	113	5	10
	29	99	35	10

Lampiran A.2

Berikut ini adalah tabel hasil transformasi akar dari data penjualan di Pasuruan.

Bulan	Tanggal	Data Asli	$Y1_t$
September 2006	1	56	7.4833
	2	2	1.4142
	3	17	4.1231
	4	89	9.434
	5	36	6
	6	35	5.9161
	7	10	3.1623
	8	3	1.7321
	9	7	2.6458
	10	8	2.8284
	11	12	3.4641
	12	11	3.3166
	13	35	5.9161
	14	27	5.1962
	15	34	5.831
	16	37	6.0828
	17	2	1.4142
	18	9	3
	19	19	4.3589
	20	3	1.7321
	21	6	2.4495
	22	17	4.1231
	23	54	7.3485
	24	89	9.434
	25	34	5.831
	26	67	8.1854
	27	114	10.6771
	28	75	8.6603
	29	147	12.1244
	30	140	11.8322
Oktober 2006	1	81	9
	2	77	8.775
	3	35	5.9161
	4	19	4.3589
	5	44	6.6332
	6	8	2.8284
	7	46	6.7823
	8	38	6.1644
	9	121	11
	10	104	10.198
	11	146	12.083
	12	53	7.2801
	13	95	9.7468
	14	91	9.5394
	15	63	7.9373
	16	27	5.1962

	17	7	2.6458
	18	27	5.1962
	19	4	2
	20	18	4.2426
	21	22	4.6904
	22	47	6.8557
	23	36	6
	24	8	2.8284
	25	14	3.7417
	26	18	4.2426
	27	7	2.6458
	28	46	6.7823
	29	37	6.0828
	30	34	5.831
	31	10	3.1623
Nopember 2006	1	6	2.4495
	2	20	4.4721
	3	85	9.2195
	4	2	1.4142
	5	8	2.8284
	6	14	3.7417
	7	20	4.4721
	8	30	5.4772
	9	20	4.4721
	10	67	8.1854
	11	72	8.4853
	12	78	8.8318
	13	20	4.4721
	14	43	6.5574
	15	45	6.7082
	16	60	7.746
	17	90	9.4868
	18	115	10.7238
	19	78	8.8318
	20	3	1.7321
	21	56	7.4833
	22	70	8.3666
	23	115	10.7238
	24	200	14.1421
	25	167	12.9228
	26	77	8.775
	27	17	4.1231
	28	33	5.7446
	29	24	4.899
	30	19	4.3589
Desember 2006	1	105	10.247
	2	195	13.9642
	3	126	11.225
	4	36	6
	5	23	4.7958

	6	102	10.0995
	7	57	7.5498
	8	133	11.5326
	9	95	9.7468
	10	91	9.5394
	11	90	9.4868
	12	56	7.4833
	13	30	5.4772
	14	35	5.9161
	15	80	8.9443
	16	20	4.4721
	17	27	5.1962
	18	27	5.1962
	19	37	6.0828
	20	19	4.3589
	21	88	9.3808
	22	105	10.247
	23	116	10.7703
	24	29	5.3852
	25	3	1.7321
	26	17	4.1231
	27	79	8.8882
	28	34	5.831
	29	103	10.1489
	30	160	12.6491
	31	9	3
Januari 2006	1	28	5.2915
	2	98	9.8995
	3	63	7.9373
	4	68	8.2462
	5	90	9.4868
	6	21	4.5826
	7	27	5.1962
	8	120	10.9545
	9	187	13.6748
	10	211	14.5258
	11	178	13.3417
	12	201	14.1774
	13	190	13.784
	14	86	9.2736

Lampiran A.3

Berikut ini adalah tabel hasil transformasi akar dari data penjualan di Malang.

Bulan	Tanggal	MALANG	$Y2_t$
September 2006	1	25	5
	2	82	9.0554
	3	75	8.6603
	4	52	7.2111
	5	51	7.1414
	6	15	3.873
	7	17	4.1231
	8	3	1.7321
	9	20	4.4721
	10	19	4.3589
	11	22	4.6904
	12	41	6.4031
	13	27	5.1962
	14	26	5.099
	15	10	3.1623
	16	8	2.8284
	17	40	6.3246
	18	138	11.7473
	19	162	12.7279
	20	143	11.9583
	21	97	9.8489
	22	33	5.7446
	23	82	9.0554
	24	30	5.4772
	25	20	4.4721
	26	37	6.0828
	27	57	7.5498
	28	46	6.7823
	29	5	2.2361
	30	9	3
Oktober 2006	1	19	4.3589
	2	56	7.4833
	3	69	8.3066
	4	43	6.5574
	5	78	8.8318
	6	75	8.6603
	7	93	9.6437
	8	74	8.6023
	9	138	11.7473
	10	58	7.6158
	11	63	7.9373
	12	46	6.7823
	13	34	5.831
	14	11	3.3166
	15	13	3.6056
	16	2	1.4142

	17	35	5.9161
	18	123	11.0905
	19	41	6.4031
	20	39	6.245
	21	42	6.4807
	22	28	5.2915
	23	22	4.6904
	24	13	3.6056
	25	26	5.099
	26	38	6.1644
	27	79	8.8882
	28	100	10
	29	96	9.798
	30	166	12.8841
	31	67	8.1854
Nopember 2006	1	15	3.873
	2	27	5.1962
	3	22	4.6904
	4	10	3.1623
	5	21	4.5826
	6	64	8
	7	61	7.8102
	8	60	7.746
	9	45	6.7082
	10	43	6.5574
	11	20	4.4721
	12	10	3.1623
	13	91	9.5394
	14	40	6.3246
	15	50	7.0711
	16	51	7.1414
	17	52	7.2111
	18	110	10.4881
	19	107	10.3441
	20	94	9.6954
	21	99	9.9499
	22	77	8.775
	23	19	4.3589
	24	70	8.3666
	25	23	4.7958
	26	42	6.4807
	27	3	1.7321
	28	3	1.7321
	29	5	2.2361
	30	5	2.2361
Desember 2006	1	95	9.7468
	2	20	4.4721
	3	29	5.3852
	4	46	6.7823
	5	30	5.4772

	6	27	5.1962
	7	12	3.4641
	8	106	10.2956
	9	102	10.0995
	10	23	4.7958
	11	34	5.831
	12	55	7.4162
	13	43	6.5574
	14	76	8.7178
	15	80	8.9443
	16	4	2
	17	8	2.8284
	18	18	4.2426
	19	39	6.245
	20	16	4
	21	29	5.3852
	22	110	10.4881
	23	35	5.9161
	24	20	4.4721
	25	39	6.245
	26	41	6.4031
	27	30	5.4772
	28	28	5.2915
	29	30	5.4772
	30	32	5.6569
	31	37	6.0828
Januari 2006	1	35	5.9161
	2	61	7.8102
	3	28	5.2915
	4	15	3.873
	5	10	3.1623
	6	105	10.247
	7	29	5.3852
	8	78	8.8318
	9	122	11.0454
	10	29	5.3852
	11	35	5.9161
	12	20	4.4721
	13	78	8.8318
	14	114	10.6771

Lampiran A.4

Berikut ini adalah tabel hasil transformasi akar dari data penjualan di Batu.

Bulan	Tanggal	BATU	$Y3_t$
September 2006	1	20	4.4721
	2	17	4.1231
	3	96	9.798
	4	60	7.746
	5	5	2.2361
	6	35	5.9161
	7	70	8.3666
	8	50	7.0711
	9	40	6.3246
	10	78	8.8318
	11	15	3.873
	12	42	6.4807
	13	86	9.2736
	14	50	7.0711
	15	51	7.1414
	16	100	10
	17	55	7.4162
	18	70	8.3666
	19	130	11.4018
	20	45	6.7082
	21	33	5.7446
	22	34	5.831
	23	60	7.746
	24	3	1.7321
	25	30	5.4772
	26	45	6.7082
	27	57	7.5498
	28	6	2.4495
	29	5	2.2361
	30	40	6.3246
Oktober 2006	1	43	6.5574
	2	55	7.4162
	3	23	4.7958
	4	43	6.5574
	5	20	4.4721
	6	89	9.434
	7	20	4.4721
	8	29	5.3852
	9	89	9.434
	10	90	9.4868
	11	61	7.8102
	12	22	4.6904
	13	37	6.0828
	14	34	5.831
	15	5	2.2361
	16	31	5.5678

	17	27	5.1962
	18	60	7.746
	19	90	9.4868
	20	67	8.1854
	21	30	5.4772
	22	29	5.3852
	23	39	6.245
	24	45	6.7082
	25	8	2.8284
	26	9	3
	27	29	5.3852
	28	71	8.4261
	29	18	4.2426
	30	95	9.7468
	31	97	9.8489
Nopember 2006	1	42	6.4807
	2	45	6.7082
	3	67	8.1854
	4	63	7.9373
	5	98	9.8995
	6	76	8.7178
	7	50	7.0711
	8	37	6.0828
	9	10	3.1623
	10	15	3.873
	11	42	6.4807
	12	67	8.1854
	13	75	8.6603
	14	23	4.7958
	15	26	5.099
	16	91	9.5394
	17	6	2.4495
	18	69	8.3066
	19	45	6.7082
	20	67	8.1854
	21	33	5.7446
	22	90	9.4868
	23	100	10
	24	107	10.3441
	25	102	10.0995
	26	15	3.873
	27	58	7.6158
	28	24	4.899
	29	106	10.2956
	30	79	8.8882
Desember 2006	1	57	7.5498
	2	45	6.7082
	3	39	6.245
	4	57	7.5498
	5	70	8.3666

	6	32	5.6569
	7	17	4.1231
	8	45	6.7082
	9	46	6.7823
	10	13	3.6056
	11	15	3.873
	12	85	9.2195
	13	25	5
	14	117	10.8167
	15	116	10.7703
	16	50	7.0711
	17	109	10.4403
	18	111	10.5357
	19	38	6.1644
	20	32	5.6569
	21	64	8
	22	28	5.2915
	23	78	8.8318
	24	79	8.8882
	25	45	6.7082
	26	55	7.4162
	27	88	9.3808
	28	19	4.3589
	29	17	4.1231
	30	3	1.7321
	31	68	8.2462
Januari	1	98	9.8995
2006	2	23	4.7958
	3	30	5.4772
	4	55	7.4162
	5	15	3.873
	6	89	9.434
	7	45	6.7082
	8	30	5.4772
	9	13	3.6056
	10	55	7.4162
	11	65	8.0623
	12	35	5.9161
	13	36	6
	14	45	6.7082

Lampiran A.5

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (1,0,0) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Pasuruan.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$\left(Y_t - \hat{Y}_t\right)^2$
137	105	69.076045	35.923955	1290.5305
138	77	59.959779	17.040221	290.36913
139	117	54.88365	62.11635	3858.441
140	167	51.99405	115.00595	13226.368
141	37	50.325829	-13.325829	177.57772
142	59	49.354419	9.6455814	93.037241
143	67	48.785615	18.214385	331.76382
144	49	48.451623	0.5483771	0.3007174
145	40	48.255113	-8.2551126	68.146885
146	42	48.139313	-6.1393131	37.691165
147	106	48.071065	57.928935	3355.7615
148	178	48.03086	129.96914	16891.977
149	217	48.007161	168.99284	28558.58
150	113	47.993166	65.006834	4225.8885
151	99	47.984853	51.015147	2602.5452
			Jumlah	75008.979
			MSE	5000.5986

Lampiran A.6

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (0,0,2) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Pasuruan.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$(Y_t - \hat{Y}_t)^2$
137	105	51.795226	53.204774	2830.748
138	77	45.941148	31.058852	964.65226
139	117	47.784177	69.215823	4790.8302
140	167	47.784177	119.21582	14212.412
141	37	47.784177	-10.784177	116.29847
142	59	47.784177	11.215823	125.79469
143	67	47.784177	19.215823	369.24785
144	49	47.784177	1.215823	1.4782255
145	40	47.784177	-7.784177	60.593412
146	42	47.784177	-5.784177	33.456704
147	106	47.784177	58.215823	3389.082
148	178	47.784177	130.21582	16956.161
149	217	47.784177	169.21582	28633.995
150	113	47.784177	65.215823	4253.1036
151	99	47.784177	51.215823	2623.0605
			Jumlah	79360.914
			MSE	5290.7276

Lampiran A.7

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (1,0,0) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Malang.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$\left(Y_t - \hat{Y}_t\right)^2$
137	58	70.406028	-12.406028	153.90953
138	5	53.99428	-48.99428	2400.4394
139	32	47.230981	-15.230981	231.98279
140	20	44.296612	-24.296612	590.32536
141	33	42.989397	-9.989397	99.788052
142	62	42.399762	19.600238	384.16931
143	18	42.132172	-24.132172	582.36174
144	19	42.010361	-23.010361	529.4767
145	60	41.954897	18.045103	325.62574
146	44	41.92964	2.0703604	4.2863922
147	30	41.918114	-11.918114	142.04145
148	30	41.912805	-11.912805	141.91493
149	23	41.910475	-18.910475	357.60606
150	5	41.90931	-36.90931	1362.2971
151	35	41.908921	-6.9089212	47.733192
			Jumlah	7353.9578
			MSE	490.26386

Lampiran A.8

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (0,0,1) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Malang.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$(Y_t - \hat{Y}_t)^2$
137	58	58.741801	-0.7418011	0.5502688
138	5	41.715193	-36.715193	1348.0054
139	32	41.715193	-9.7151932	94.384979
140	20	41.715193	-21.715193	471.54962
141	33	41.715193	-8.7151932	75.954593
142	62	41.715193	20.284807	411.47339
143	18	41.715193	-23.715193	562.41039
144	19	41.715193	-22.715193	515.98
145	60	41.715193	18.284807	334.33416
146	44	41.715193	2.2848068	5.2203421
147	30	41.715193	-11.715193	137.24575
148	30	41.715193	-11.715193	137.24575
149	23	41.715193	-18.715193	350.25846
150	5	41.715193	-36.715193	1348.0054
151	35	41.715193	-6.7151932	45.09382
			Jumlah	5837.7123
			MSE	389.18082

Lampiran A.9

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (1,0,0) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Batu.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$(Y_t - \hat{Y}_t)^2$
137	45	45.358743	-0.3587433	0.1286968
138	63	45.410347	17.589653	309.39588
139	28	45.41776	-17.41776	303.37837
140	11	45.418838	-34.418838	1184.6564
141	56	45.418973	10.581027	111.95813
142	74	45.418973	28.581027	816.87509
143	10	45.418973	-35.418973	1254.5037
144	25	45.418973	-20.418973	416.93447
145	40	45.418973	-5.4189732	29.365271
146	78	45.418973	32.581027	1061.5233
147	112	45.418973	66.581027	4433.0331
148	69	45.418973	23.581027	556.06482
149	60	45.418973	14.581027	212.60634
150	10	45.418973	-35.418973	1254.5037
151	10	45.418973	-35.418973	1254.5037
			Jumlah	13199.431
			MSE	879.96206

Lampiran A.10

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model ARIMA (0,0,1) untuk ramalan data penjualan rokok Hanisa Alami di lokasi Batu.

t	Y_t	$\hat{Y}_t$	$Y_t - \hat{Y}_t$	$(Y_t - \hat{Y}_t)^2$
137	45	45.569115	-0.5691152	0.3238922
138	63	45.429487	17.570513	308.72292
139	28	45.429487	-17.429487	303.78702
140	11	45.429487	-34.429487	1185.3896
141	56	45.429487	10.570513	111.73574
142	74	45.429487	28.570513	816.2742
143	10	45.429487	-35.429487	1255.2486
144	25	45.429487	-20.429487	417.36395
145	40	45.429487	-5.4294872	29.479331
146	78	45.429487	32.570513	1060.8383
147	112	45.429487	66.570513	4431.6332
148	69	45.429487	23.570513	555.56907
149	60	45.429487	14.570513	212.29984
150	10	45.429487	-35.429487	1255.2486
151	10	45.429487	-35.429487	1255.2486
			Jumlah	13199.163
			MSE	879.94418

Lampiran A.11

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model GSTAR orde 1 untuk ramalan data penjualan rokok Hanisa Alami di lokasi Pasuruan.

Persamaan :

$\dot{y}1_t = 0.58984\dot{y}1_{t-1} + \alpha 1_t$

t	$y1_t$	$\dot{y}1_{t-1}$	$\dot{y}1_t$	$\hat{y}1_t$	$y1_t - \hat{y}1_t$	$(y1_t - \hat{y}1_t)^2$
137	105	2.11299	1.246326	99.75333	5.24667145	27.527561
138	77	3.08632	1.820435	101.514	-24.513984	600.93539
139	117	1.61433	0.952196	99.10668	17.893322	320.17097
140	167	3.65602	2.156467	102.8503	64.1496508	4115.1777
141	37	5.76222	3.398788	109.7518	-72.751759	5292.8184
142	59	-1.07787	-0.63577	98.6042	-39.604205	1568.493
143	67	0.52052	0.307024	98.29426	-31.294263	979.33092
144	49	1.02472	0.604421	98.56532	-49.565325	2456.7214
145	40	-0.16063	-0.09475	98.20898	-58.208977	3388.285
146	42	-0.83607	-0.49315	98.44319	-56.443194	3185.8342
147	106	-0.67989	-0.40103	98.36082	7.63917789	58.357039
148	178	3.135	1.849148	101.6193	76.3806502	5834.0037
149	217	6.18103	3.645819	111.492	105.508006	11131.939
150	113	7.57029	4.46526	118.1385	-5.1385456	26.40465
151	99	3.46952	2.046462	102.388	-3.3880054	11.478581
					Jumlah	38997.478
					MSE	2599.8319

Lampiran A.12

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model GSTAR orde 1 untuk ramalan data penjualan rokok Hanisa Alami di lokasi Malang.

Persamaan :

$\dot{y}2_t = 0.45498\dot{y}2_{t-1} + \alpha 2_t$

t	$y2_t$	$\dot{y}2_{t-1}$	$\dot{y}2_t$	$\hat{y}2_t$	$y2_t - \hat{y}2_t$	$(y2_t - \hat{y}2_t)^2$
137	58	4.32867	1.969458	35.47877	22.5212341	507.20599
138	5	1.26737	0.576628	31.9325	-26.9325	725.35955
139	32	-4.11234	-1.87103	35.10076	-3.1007624	9.6147277
140	20	-0.69155	-0.31464	31.699	-11.698999	136.86658
141	33	-1.87627	-0.85367	32.32874	0.67125551	0.450584
142	62	-0.60384	-0.27474	31.67548	30.3245206	919.57655
143	18	1.5256	0.694117	32.0818	-14.081799	198.29707
144	19	-2.10576	-0.95808	32.51791	-13.517915	182.73402
145	60	-1.98951	-0.90519	32.41936	27.580636	760.69148
146	44	1.39756	0.635862	32.00432	11.9956797	143.89633
147	30	0.28485	0.129601	31.6168	-1.6167964	2.6140307
148	30	-0.87118	-0.39637	31.75711	-1.7571088	3.0874312
149	23	-0.87118	-0.39637	31.75711	-8.7571088	76.686954
150	5	-1.55257	-0.70639	32.09898	-27.098984	734.35496
151	35	-4.11234	-1.87103	35.10076	-0.1007624	0.0101531
					Jumlah	4401.4464
					MSE	293.42976

Lampiran A.13

Berikut ini merupakan perhitungan MSE (*Mean Square Error*) dari model GSTAR orde 1 untuk ramalan data penjualan rokok Hanisa Alami di lokasi Batu.

Persamaan :

$\dot{y}3_t = 0.14252\dot{y}3_{t-1} + \alpha 3_t$

t	$y3_t$	$\dot{y}3_{t-1}$	$\dot{y}3_t$	$\hat{y}3_t$	$y3_t - \hat{y}3_t$	$(y3_t - \hat{y}3_t)^2$
137	45	0.00253	0.000361	46.06667	-1.0666668	1.1377781
138	63	0.00253	0.000361	46.06667	16.9333332	286.73777
139	28	1.23158	0.175525	46.09748	-18.097476	327.51862
140	11	-1.41417	-0.20155	46.10729	-35.107288	1232.5217
141	56	-3.38905	-0.48301	46.29996	9.70003718	94.090721
142	74	0.77764	0.110829	46.07895	27.9210502	779.58504
143	10	1.89665	0.270311	46.13973	-36.139734	1306.0804
144	25	-3.54339	-0.505	46.3217	-21.321696	454.61471
145	40	-1.70567	-0.24309	46.12576	-6.1257604	37.524941
146	78	-0.38112	-0.05432	46.06962	31.930383	1019.5494
147	112	2.12609	0.30301	46.15848	65.8415181	4335.1055
148	69	3.87733	0.552597	46.37203	22.6279698	512.02502
149	60	1.60095	0.228167	46.11873	13.881273	192.68974
150	10	1.04029	0.148262	46.08865	-36.088648	1302.3905
151	10	-3.54339	-0.505	46.3217	-36.321696	1319.2656
					Jumlah	13200.837
					MSE	880.05583

Lampiran A.14

Berikut ini adalah *output stepwise regression* dari model GSTAR dengan bobot seragam.

Stepwise Regression: Yt versus X1t-1, FX1t-1, ...

Alpha-to-Enter: 0.15 Alpha-to-Remove: 0.15

Response is Yt on 6 predictors, with N = 405

Step	1	2	3
No constant			
X1t-1	0.590	0.590	0.590
T-Value	9.00	9.33	9.35
P-Value	0.000	0.000	0.000
X2t-1		0.455	0.455
T-Value		5.61	5.62
P-Value		0.000	0.000
X3t-1			0.143
T-Value			1.54
P-Value			0.124

Lampiran A.15

Berikut ini adalah *output stepwise regression* dari model GSTAR dengan bobot tidak seragam.

Stepwise Regression: Yt versus X1t-1, FX1t-1, ...

Alpha-to-Enter: 0.15 Alpha-to-Remove: 0.15

Response is Yt on 6 predictors, with N = 405

Step	1	2	3
No constant			
X1t-1	0.590	0.590	0.590
T-Value	9.00	9.33	9.35
P-Value	0.000	0.000	0.000
X2t-1		0.455	0.455
T-Value		5.61	5.62
P-Value		0.000	0.000
X3t-1			0.143
T-Value			1.54
P-Value			0.124

LAMPIRAN B

Lampiran B.1

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (1,0,0) untuk data penjualan rokok Hanisa Alami di Pasuruan.

ARIMA Model: Y1t

```
Estimates at each iteration

Iteration      SSE    Parameters
        0  1304.42  0.100  6.296
        1  1122.82  0.250  5.239
        2  1006.85  0.400  4.182
        3   956.51  0.550  3.125
        4   954.17  0.588  2.854
        5   954.16  0.590  2.840
        6   954.16  0.590  2.840

Relative change in each estimate less than 0.0010


Final Estimates of Parameters

Type         Coef  SE Coef      T      P
AR   1     0.5900   0.0700   8.43  0.000
Constant  2.8398   0.2288  12.41  0.000
Mean      6.9263   0.5581


Number of observations:  136
Residuals:    SS =  954.094 (backforecasts excluded)
              MS =  7.120  DF = 134


Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag             12     24     36     48
Chi-Square     8.5   24.1   35.4   53.7
DF              10     22     34     46
P-Value     0.578  0.343  0.401  0.204
```

Lampiran B.2

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (0,0,2) untuk data penjualan rokok Hanisa Alami di Pasuruan.

ARIMA Model: Y1t

Estimates at each iteration

Iteration	SSE	Parameters		
0	1815.03	0.100	0.100	6.996
1	1515.37	-0.050	0.131	6.993
2	1274.09	-0.200	0.112	6.991
3	1097.45	-0.350	0.028	6.984
4	1000.44	-0.500	-0.103	6.963
5	982.45	-0.625	-0.227	6.919
6	981.47	-0.605	-0.194	6.914
7	981.42	-0.610	-0.201	6.912
8	981.41	-0.609	-0.199	6.913
9	981.41	-0.610	-0.200	6.913
10	981.41	-0.610	-0.199	6.913

Relative change in each estimate less than 0.0010

Final Estimates of Parameters

Type	Coef	SE Coef	T	P
MA 1	-0.6095	0.0851	-7.17	0.000
MA 2	-0.1994	0.0851	-2.34	0.021
Constant	6.9126	0.4209	16.42	0.000
Mean	6.9126	0.4209		

Number of observations: 136
Residuals: SS = 979.834 (backforecasts excluded)
MS = 7.367 DF = 133

Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag	12	24	36	48
Chi-Square	12.5	26.7	35.5	52.5
DF	9	21	33	45
P-Value	0.185	0.182	0.351	0.205

Lampiran B.3

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (1,0,0) untuk data penjualan rokok Hanisa Alami di Malang.

ARIMA Model: Y2t

```
Estimates at each iteration

Iteration      SSE    Parameters
        0  830.591  0.100  5.901
        1  755.649  0.250  4.903
        2  720.639  0.400  3.904
        3  717.812  0.453  3.545
        4  717.801  0.456  3.522
        5  717.801  0.456  3.521

Relative change in each estimate less than 0.0010


Final Estimates of Parameters

Type         Coef  SE Coef      T      P
AR   1     0.4561   0.0778   5.86  0.000
Constant  3.5211   0.1985  17.74  0.000
Mean      6.4737   0.3649


Number of observations:  136
Residuals:     SS =  717.443 (backforecasts excluded)
               MS =  5.354  DF = 134


Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag             12     24     36     48
Chi-Square    11.8   25.6   39.9   51.3
DF              10     22     34     46
P-Value      0.296  0.268  0.225  0.274
```

Lampiran B.4

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (0,0,1) untuk data penjualan rokok Hanisa Alami di Malang.

ARIMA Model: Y2t

```
Estimates at each iteration

Iteration      SSE     Parameters
        0  996.032   0.100  6.557
        1  864.765  -0.050  6.548
        2  782.731  -0.200  6.533
        3  740.624  -0.350  6.506
        4  733.917  -0.442  6.466
        5  733.881  -0.436  6.459
        6  733.881  -0.436  6.459

Relative change in each estimate less than 0.0010


Final Estimates of Parameters

Type          Coef  SE Coef      T      P
MA   1     -0.4356   0.0777  -5.60  0.000
Constant    6.4587   0.2878  22.44  0.000
Mean        6.4587   0.2878


Number of observations:  136
Residuals:    SS =  732.985 (backforecasts excluded)
              MS =  5.470  DF = 134


Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag             12     24     36     48
Chi-Square    20.8   41.4   56.5   70.1
DF              10     22     34     46
P-Value      0.023  0.007  0.009  0.012
```

Lampiran B.5

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (1,0,0) untuk data penjualan rokok Hanisa Alami di Batu.

ARIMA Model: Y3t

```
Estimates at each iteration

Iteration      SSE    Parameters
        0  664.409  0.100  6.158
        1  662.006  0.140  5.802
        2  661.988  0.143  5.774
        3  661.987  0.144  5.772
        4  661.987  0.144  5.771

Relative change in each estimate less than 0.0010


Final Estimates of Parameters

Type         Coef  SE Coef      T      P
AR   1     0.1436   0.0855   1.68  0.095
Constant  5.7714   0.1906  30.28  0.000
Mean      6.7394   0.2225


Number of observations:  136
Residuals:    SS =  661.884 (backforecasts excluded)
              MS =  4.939  DF = 134


Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag             12     24     36     48
Chi-Square     8.8   27.2   36.9   50.2
DF              10     22     34     46
P-Value     0.549  0.205  0.337  0.311
```

Lampiran B.6

Berikut ini adalah *output* MINITAB 14 dari model ARIMA (0,0,1) untuk data penjualan rokok Hanisa Alami di Batu.

ARIMA Model: Y3t

```
Estimates at each iteration

Iteration      SSE     Parameters
        0  703.141    0.100  6.842
        1  667.984   -0.050  6.790
        2  660.256   -0.145  6.748
        3  660.011   -0.162  6.741
        4  660.004   -0.165  6.740
        5  660.004   -0.165  6.740
        6  660.004   -0.165  6.740

Relative change in each estimate less than 0.0010


Final Estimates of Parameters

Type          Coef  SE Coef      T      P
MA   1     -0.1651   0.0852  -1.94  0.055
Constant    6.7401   0.2217  30.40  0.000
Mean        6.7401   0.2217


Number of observations:  136
Residuals:    SS =  659.919 (backforecasts excluded)
              MS =  4.925  DF = 134


Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag             12     24     36     48
Chi-Square     8.5   26.3   35.8   49.1
DF              10     22     34     46
P-Value      0.583  0.240  0.384  0.348
```

Lampiran B.7

Berikut ini adalah *output* MINITAB 14 dari model regresi untuk penjualan rokok Hanisa Alami di tiga lokasi dengan penggunaan metode GSTAR orde 1 dengan bobot seragam.

Regression Analysis: Yt versus X1t-1, FX1t-1, ...

```
The regression equation is
Yt = 0.592 X1t-1 + 0.069 FX1t-1 + 0.466 X2t-1 - 0.126 FX2t-1 + 0.141 X3t-
1
     - 0.0694 FX3t-1


Predictor       Coef  SE Coef      T      P
Noconstant
X1t-1        0.59156  0.06321   9.36  0.000
FX1t-1        0.0689   0.1153   0.60  0.550
X2t-1        0.46576  0.08161   5.71  0.000
FX2t-1       -0.1260   0.1121  -1.12  0.262
X3t-1        0.14081  0.09268   1.52  0.129
FX3t-1      -0.06936  0.09736  -0.71  0.477


S = 2.40857


Analysis of Variance

Source           DF       SS      MS      F      P
Regression        6   715.06  119.18  20.54  0.000
Residual Error  399  2314.69    5.80
Total           405  3029.74


Source  DF  Seq SS
X1t-1    1  506.14
FX1t-1   1    2.07
X2t-1    1  182.85
FX2t-1   1    7.33
X3t-1    1   13.73
FX3t-1   1    2.94
```

Lampiran B.8

Berikut ini adalah *output* MINITAB 14 dari model regresi untuk penjualan rokok Hanisa Alami di tiga lokasi dengan penggunaan metode GSTAR orde 1 dengan bobot tidak seragam.

Regression Analysis: Yt versus X1t-1, FX1t-1, ...

```
The regression equation is
Yt = 0.590 X1t-1 + 0.077 FX1t-1 + 0.466 X2t-1 - 0.126 FX2t-1 + 0.144 X3t-
1
     - 0.037 FX3t-1


Predictor       Coef  SE Coef      T      P
Noconstant
X1t-1        0.59014  0.06317   9.34  0.000
FX1t-1        0.0768   0.1067   0.72  0.472
X2t-1        0.46576  0.08163   5.71  0.000
FX2t-1       -0.1260   0.1121  -1.12  0.262
X3t-1        0.14365  0.09272   1.55  0.122
FX3t-1       -0.0370   0.1002  -0.37  0.712


S = 2.40921


Analysis of Variance

Source           DF       SS      MS      F      P
Regression        6   713.84  118.97  20.50  0.000
Residual Error  399  2315.91    5.80
Total           405  3029.74


Source  DF  Seq SS
X1t-1    1  506.14
FX1t-1   1    3.00
X2t-1    1  182.85
FX2t-1   1    7.33
X3t-1    1   13.73
FX3t-1   1    0.79
```

Lampiran B.9

Tabel di bawah ini merupakan *worksheet* MINITAB 14 untuk pengolahan model GSTAR orde 1 untuk pembentukan matriks.

t	$Y1_t$	$Y2_t$	$Y3_t$	$Y1^*_t$	$Y2^*_t$	$Y3^*_t$	$Y1_{t-1}$	$Y2_{t-1}$	$Y3_{t-1}$
1	1.4142	9.0554	4.1231	-5.48131	2.59857	-2.61909	0.58779	-1.45681	-2.27006
2	4.1231	8.6603	9.798	-2.77242	2.20344	3.05576	-5.48131	2.59857	-2.61909
3	9.434	7.2111	7.746	2.53846	0.75429	1.00377	-2.77242	2.20344	3.05576
4	6	7.1414	2.2361	-0.89552	0.68462	-4.50613	2.53846	0.75429	1.00377
5	5.9161	3.873	5.9161	-0.97944	-2.58383	-0.82612	-0.89552	0.68462	-4.50613
6	3.1623	4.1231	8.3666	-3.73324	-2.33371	1.62441	-0.97944	-2.58383	-0.82612
7	1.7321	1.7321	7.0711	-5.16347	-4.72476	0.32887	-3.73324	-2.33371	1.62441
8	2.6458	4.4721	6.3246	-4.24977	-1.98468	-0.41764	-5.16347	-4.72476	0.32887
9	2.8284	4.3589	8.8318	-4.06709	-2.09791	2.08957	-4.24977	-1.98468	-0.41764
10	3.4641	4.6904	3.873	-3.43142	-1.7664	-2.86921	-4.06709	-2.09791	2.08957
11	3.3166	6.4031	6.4807	-3.5789	-0.05369	-0.26145	-3.43142	-1.7664	-2.86921
12	5.9161	5.1962	9.2736	-0.97944	-1.26066	2.53142	-3.5789	-0.05369	-0.26145
13	5.1962	5.099	7.0711	-1.69937	-1.35779	0.32887	-0.97944	-1.26066	2.53142
14	5.831	3.1623	7.1414	-1.06457	-3.29453	0.39923	-1.69937	-1.35779	0.32887
15	6.0828	2.8284	10	-0.81276	-3.62839	3.2578	-1.06457	-3.29453	0.39923
16	1.4142	6.3246	7.4162	-5.48131	-0.13226	0.674	-0.81276	-3.62839	3.2578
17	3	11.7473	8.3666	-3.89552	5.29053	1.62441	-5.48131	-0.13226	0.674
18	4.3589	12.7279	11.4018	-2.53662	6.27111	4.65956	-3.89552	5.29053	1.62441
19	1.7321	11.9583	6.7082	-5.16347	5.50145	-0.03399	-2.53662	6.27111	4.65956
20	2.4495	9.8489	5.7446	-4.44603	3.39205	-0.99763	-5.16347	5.50145	-0.03399
21	4.1231	5.7446	5.831	-2.77242	-0.71225	-0.91124	-4.44603	3.39205	-0.99763
22	7.3485	9.0554	7.746	0.45295	2.59857	1.00377	-2.77242	-0.71225	-0.91124
23	9.434	5.4772	1.7321	2.53846	-0.97959	-5.01014	0.45295	2.59857	1.00377
24	5.831	4.4721	5.4772	-1.06457	-1.98468	-1.26497	2.53846	-0.97959	-5.01014
25	8.1854	6.0828	6.7082	1.28983	-0.37405	-0.03399	-1.06457	-1.98468	-1.26497
26	10.6771	7.5498	7.5498	3.78156	1.09302	0.80764	1.28983	-0.37405	-0.03399
27	8.6603	6.7823	2.4495	1.76473	0.32552	-4.29271	3.78156	1.09302	0.80764
28	12.1244	2.2361	2.2361	5.22883	-4.22074	-4.50613	1.76473	0.32552	-4.29271
29	11.8322	3	6.3246	4.93664	-3.45681	-0.41764	5.22883	-4.22074	-4.50613
30	9	4.3589	6.5574	2.10448	-2.09791	-0.18476	4.93664	-3.45681	-0.41764
31	8.775	7.4833	7.4162	1.87944	1.0265	0.674	2.10448	-2.09791	-0.18476
32	5.9161	8.3066	4.7958	-0.97944	1.84981	-1.94636	1.87944	1.0265	0.674
33	4.3589	6.5574	6.5574	-2.53662	0.10063	-0.18476	-0.97944	1.84981	-1.94636
34	6.6332	8.8318	4.4721	-0.26227	2.37495	-2.27006	-2.53662	0.10063	-0.18476
35	2.8284	8.6603	9.434	-4.06709	2.20344	2.69179	-0.26227	2.37495	-2.27006
36	6.7823	9.6437	4.4721	-0.11319	3.18684	-2.27006	-4.06709	2.20344	2.69179
37	6.1644	8.6023	5.3852	-0.73111	2.14551	-1.35703	-0.11319	3.18684	-2.27006
38	11	11.7473	9.434	4.10448	5.29053	2.69179	-0.73111	2.14551	-1.35703
39	10.198	7.6158	9.4868	3.30252	1.15896	2.74464	4.10448	5.29053	2.69179
40	12.083	7.9373	7.8102	5.18752	1.48044	1.06805	3.30252	1.15896	2.74464
41	7.2801	6.7823	4.6904	0.38459	0.32552	-2.05178	5.18752	1.48044	1.06805
42	9.7468	5.831	6.0828	2.85127	-0.62586	-0.65943	0.38459	0.32552	-2.05178
43	9.5394	3.3166	5.831	2.64387	-3.14019	-0.91124	2.85127	-0.62586	-0.65943
44	7.9373	3.6056	2.2361	1.04173	-2.85126	-4.50613	2.64387	-3.14019	-0.91124
45	5.1962	1.4142	5.5678	-1.69937	-5.0426	-1.17443	1.04173	-2.85126	-4.50613
46	2.6458	5.9161	5.1962	-4.24977	-0.54073	-1.54604	-1.69937	-5.0426	-1.17443
47	5.1962	11.0905	7.746	-1.69937	4.63372	1.00377	-4.24977	-0.54073	-1.54604
48	2	6.4031	9.4868	-4.89552	-0.05369	2.74464	-1.69937	4.63372	1.00377
49	4.2426	6.245	8.1854	-2.65288	-0.21181	1.44316	-4.89552	-0.05369	2.74464

50	4.6904	6.4807	5.4772	-2.20511	0.02393	-1.26497	-2.65288	-0.21181	1.44316
51	6.8557	5.2915	5.3852	-0.03987	-1.16531	-1.35703	-2.20511	0.02393	-1.26497
52	6	4.6904	6.245	-0.89552	-1.7664	-0.4972	-0.03987	-1.16531	-1.35703
53	2.8284	3.6056	6.7082	-4.06709	-2.85126	-0.03399	-0.89552	-1.7664	-0.4972
54	3.7417	5.099	2.8284	-3.15386	-1.35779	-3.91377	-4.06709	-2.85126	-0.03399
55	4.2426	6.1644	3	-2.65288	-0.2924	-3.7422	-3.15386	-1.35779	-3.91377
56	2.6458	8.8882	5.3852	-4.24977	2.43138	-1.35703	-2.65288	-0.2924	-3.7422
57	6.7823	10	8.4261	-0.11319	3.54319	1.68395	-4.24977	2.43138	-1.35703
58	6.0828	9.798	4.2426	-0.81276	3.34115	-2.49955	-0.11319	3.54319	1.68395
59	5.831	12.8841	9.7468	-1.06457	6.42729	3.0046	-0.81276	3.34115	-2.49955
60	3.1623	8.1854	9.8489	-3.73324	1.72854	3.10666	-1.06457	6.42729	3.0046
61	2.4495	3.873	6.4807	-4.44603	-2.58383	-0.26145	-3.73324	1.72854	3.10666
62	4.4721	5.1962	6.7082	-2.42339	-1.26066	-0.03399	-4.44603	-2.58383	-0.26145
63	9.2195	4.6904	8.1854	2.32402	-1.7664	1.44316	-2.42339	-1.26066	-0.03399
64	1.4142	3.1623	7.9373	-5.48131	-3.29453	1.19506	2.32402	-1.7664	1.44316
65	2.8284	4.5826	9.8995	-4.06709	-1.87424	3.1573	-5.48131	-3.29453	1.19506
66	3.7417	8	8.7178	-3.15386	1.54319	1.9756	-4.06709	-1.87424	3.1573
67	4.4721	7.8102	7.0711	-2.42339	1.35344	0.32887	-3.15386	1.54319	1.9756
68	5.4772	7.746	6.0828	-1.4183	1.28915	-0.65943	-2.42339	1.35344	0.32887
69	4.4721	6.7082	3.1623	-2.42339	0.25139	-3.57992	-1.4183	1.28915	-0.65943
70	8.1854	6.5574	3.873	1.28983	0.10063	-2.86921	-2.42339	0.25139	-3.57992
71	8.4853	4.4721	6.4807	1.58976	-1.98468	-0.26145	1.28983	0.10063	-2.86921
72	8.8318	3.1623	8.1854	1.93624	-3.29453	1.44316	1.58976	-1.98468	-0.26145
73	4.4721	9.5394	8.6603	-2.42339	3.08258	1.91806	1.93624	-3.29453	1.44316
74	6.5574	6.3246	4.7958	-0.33808	-0.13226	-1.94636	-2.42339	3.08258	1.91806
75	6.7082	7.0711	5.099	-0.18732	0.61426	-1.64318	-0.33808	-0.13226	-1.94636
76	7.746	7.1414	9.5394	0.85045	0.68462	2.7972	-0.18732	0.61426	-1.64318
77	9.4868	7.2111	2.4495	2.59131	0.75429	-4.29271	0.85045	0.68462	2.7972
78	10.7238	10.4881	8.3066	3.82828	4.03128	1.56443	2.59131	0.75429	-4.29271
79	8.8318	10.3441	6.7082	1.93624	3.88727	-0.03399	3.82828	4.03128	1.56443
80	1.7321	9.6954	8.1854	-5.16347	3.23855	1.44316	1.93624	3.88727	-0.03399
81	7.4833	9.9499	5.7446	0.58779	3.49306	-0.99763	-5.16347	3.23855	1.44316
82	8.3666	8.775	9.4868	1.47108	2.31815	2.74464	0.58779	3.49306	-0.99763
83	10.7238	4.3589	10	3.82828	-2.09791	3.2578	1.47108	2.31815	2.74464
84	14.1421	8.3666	10.3441	7.24661	1.90979	3.60189	3.82828	-2.09791	3.2578
85	12.9228	4.7958	10.0995	6.02733	-1.66098	3.35731	7.24661	1.90979	3.60189
86	8.775	6.4807	3.873	1.87944	0.02393	-2.86921	6.02733	-1.66098	3.35731
87	4.1231	1.7321	7.6158	-2.77242	-4.72476	0.87358	1.87944	0.02393	-2.86921
88	5.7446	1.7321	4.899	-1.15096	-4.72476	-1.84322	-2.77242	-4.72476	0.87358
89	4.899	2.2361	10.2956	-1.99654	-4.22074	3.55343	-1.15096	-4.72476	-1.84322
90	4.3589	2.2361	8.8882	-2.53662	-4.22074	2.146	-1.99654	-4.22074	3.55343
91	10.247	9.7468	7.5498	3.35143	3.28998	0.80764	-2.53662	-4.22074	2.146
92	13.9642	4.4721	6.7082	7.06872	-1.98468	-0.03399	3.35143	3.28998	0.80764
93	11.225	5.3852	6.245	4.32945	-1.07165	-0.4972	7.06872	-1.98468	-0.03399
94	6	6.7823	7.5498	-0.89552	0.32552	0.80764	4.32945	-1.07165	-0.4972
95	4.7958	5.4772	8.3666	-2.09969	-0.97959	1.62441	-0.89552	0.32552	0.80764
96	10.0995	5.1962	5.6569	3.20398	-1.26066	-1.08534	-2.09969	-0.97959	1.62441
97	7.5498	3.4641	4.1231	0.65431	-2.99271	-2.61909	3.20398	-1.26066	-1.08534
98	11.5326	10.2956	6.7082	4.63704	3.83882	-0.03399	0.65431	-2.99271	-2.61909
99	9.7468	10.0995	6.7823	2.85127	3.64269	0.04013	4.63704	3.83882	-0.03399
100	9.5394	4.7958	3.6056	2.64387	-1.66098	-3.13664	2.85127	3.64269	0.04013
101	9.4868	5.831	3.873	2.59131	-0.62586	-2.86921	2.64387	-1.66098	-3.13664
102	7.4833	7.4162	9.2195	0.58779	0.95939	2.47735	2.59131	-0.62586	-2.86921
103	5.4772	6.5574	5	-1.4183	0.10063	-1.7422	0.58779	0.95939	2.47735
104	5.9161	8.7178	10.8167	-0.97944	2.26099	4.07446	-1.4183	0.10063	-1.7422

105	8.9443	8.9443	10.7703	2.04875	2.48746	4.02813	-0.97944	2.26099	4.07446
106	4.4721	2	7.0711	-2.42339	-4.45681	0.32887	2.04875	2.48746	4.02813
107	5.1962	2.8284	10.4403	-1.69937	-3.62839	3.69811	-2.42339	-4.45681	0.32887
108	5.1962	4.2426	10.5357	-1.69937	-2.21417	3.79346	-1.69937	-3.62839	3.69811
109	6.0828	6.245	6.1644	-0.81276	-0.21181	-0.57778	-1.69937	-2.21417	3.79346
110	4.3589	4	5.6569	-2.53662	-2.45681	-1.08534	-0.81276	-0.21181	-0.57778
111	9.3808	5.3852	8	2.48531	-1.07165	1.2578	-2.53662	-2.45681	-1.08534
112	10.247	10.4881	5.2915	3.35143	4.03128	-1.45069	2.48531	-1.07165	1.2578
113	10.7703	5.9161	8.8318	3.87481	-0.54073	2.08957	3.35143	4.03128	-1.45069
114	5.3852	4.4721	8.8882	-1.51036	-1.98468	2.146	3.87481	-0.54073	2.08957
115	1.7321	6.245	6.7082	-5.16347	-0.21181	-0.03399	-1.51036	-1.98468	2.146
116	4.1231	6.4031	7.4162	-2.77242	-0.05369	0.674	-5.16347	-0.21181	-0.03399
117	8.8882	5.4772	9.3808	1.99267	-0.97959	2.63864	-2.77242	-0.05369	0.674
118	5.831	5.2915	4.3589	-1.06457	-1.16531	-2.3833	1.99267	-0.97959	2.63864
119	10.1489	5.4772	4.1231	3.25337	-0.97959	-2.61909	-1.06457	-1.16531	-2.3833
120	12.6491	5.6569	1.7321	5.75359	-0.79996	-5.01014	3.25337	-0.97959	-2.61909
121	3	6.0828	8.2462	-3.89552	-0.37405	1.50402	5.75359	-0.79996	-5.01014
122	5.2915	5.9161	9.8995	-1.60402	-0.54073	3.1573	-3.89552	-0.37405	1.50402
123	9.8995	7.8102	4.7958	3.00397	1.35344	-1.94636	-1.60402	-0.54073	3.1573
124	7.9373	5.2915	5.4772	1.04173	-1.16531	-1.26497	3.00397	1.35344	-1.94636
125	8.2462	3.873	7.4162	1.35069	-2.58383	0.674	1.04173	-1.16531	-1.26497
126	9.4868	3.1623	3.873	2.59131	-3.29453	-2.86921	1.35069	-2.58383	0.674
127	4.5826	10.247	9.434	-2.31295	3.79014	2.69179	2.59131	-3.29453	-2.86921
128	5.1962	5.3852	6.7082	-1.69937	-1.07165	-0.03399	-2.31295	3.79014	2.69179
129	10.9545	8.8318	5.4772	4.05893	2.37495	-1.26497	-1.69937	-1.07165	-0.03399
130	13.6748	11.0454	3.6056	6.77927	4.58855	-3.13664	4.05893	2.37495	-1.26497
131	14.5258	5.3852	7.4162	7.63032	-1.07165	0.674	6.77927	4.58855	-3.13664
132	13.3417	5.9161	8.0623	6.44614	-0.54073	1.32006	7.63032	-1.07165	0.674
133	14.1774	4.4721	5.9161	7.28193	-1.98468	-0.82612	6.44614	-0.54073	1.32006
134	13.784	8.8318	6	6.88853	2.37495	-0.7422	7.28193	-1.98468	-0.82612
135	9.2736	10.6771	6.7082	2.3781	4.22027	-0.03399	6.88853	2.37495	-0.7422

Lampiran B.10

Di bawah ini adalah tabel matriks dari *worksheet* MINITAB 14 untuk pembentukan model GSTAR orde 1 dengan bobot seragam.

Y_t	$X1_{t-1}$	$FX1_{t-1}$	$X2_{t-1}$	$FX2_{t-1}$	$X3_{t-1}$	$FX3_{t-1}$
-5.481	0.58779	-1.86344	0	0	0	0
-2.772	-5.48131	-0.01026	0	0	0	0
2.5385	-2.77242	2.6296	0	0	0	0
-0.896	2.53846	0.87903	0	0	0	0
-0.979	-0.89552	-1.91076	0	0	0	0
-3.733	-0.97944	-1.70497	0	0	0	0
-5.163	-3.73324	-0.35465	0	0	0	0
-4.25	-5.16347	-2.19794	0	0	0	0
-4.067	-4.24977	-1.20116	0	0	0	0
-3.431	-4.06709	-0.00417	0	0	0	0
-3.579	-3.43142	-2.3178	0	0	0	0
-0.979	-3.5789	-0.15757	0	0	0	0
-1.699	-0.97944	0.63538	0	0	0	0
-1.065	-1.69937	-0.51446	0	0	0	0
-0.813	-1.06457	-1.44765	0	0	0	0
-5.481	-0.81276	-0.18529	0	0	0	0
-3.896	-5.48131	0.27087	0	0	0	0
-2.537	-3.89552	3.45747	0	0	0	0
-5.163	-2.53662	5.46533	0	0	0	0
-4.446	-5.16347	2.73373	0	0	0	0
-2.772	-4.44603	1.19721	0	0	0	0
0.453	-2.77242	-0.81175	0	0	0	0
2.5385	0.45295	1.80117	0	0	0	0
-1.065	2.53846	-2.99487	0	0	0	0
1.2898	-1.06457	-1.62482	0	0	0	0
3.7816	1.28983	-0.20402	0	0	0	0
1.7647	3.78156	0.95033	0	0	0	0
5.2288	1.76473	-1.98359	0	0	0	0
4.9366	5.22883	-4.36344	0	0	0	0
2.1045	4.93664	-1.93723	0	0	0	0
1.8794	2.10448	-1.14134	0	0	0	0
-0.979	1.87944	0.85025	0	0	0	0
-2.537	-0.97944	-0.04828	0	0	0	0
-0.262	-2.53662	-0.04207	0	0	0	0
-4.067	-0.26227	0.05244	0	0	0	0
-0.113	-4.06709	2.44761	0	0	0	0
-0.731	-0.11319	0.45839	0	0	0	0
4.1045	-0.73111	0.39424	0	0	0	0
3.3025	4.10448	3.99116	0	0	0	0
5.1875	3.30252	1.9518	0	0	0	0
0.3846	5.18752	1.27425	0	0	0	0
2.8513	0.38459	-0.86313	0	0	0	0
2.6439	2.85127	-0.64265	0	0	0	0
1.0417	2.64387	-2.02572	0	0	0	0
-1.699	1.04173	-3.67869	0	0	0	0
-4.25	-1.69937	-3.10851	0	0	0	0
-1.699	-4.24977	-1.04339	0	0	0	0
-4.896	-1.69937	2.81875	0	0	0	0
-2.653	-4.89552	1.34547	0	0	0	0

-2.205	-2.65288	0.61567	0	0	0	0
-0.04	-2.20511	-0.62052	0	0	0	0
-0.896	-0.03987	-1.26117	0	0	0	0
-4.067	-0.89552	-1.1318	0	0	0	0
-3.154	-4.06709	-1.44263	0	0	0	0
-2.653	-3.15386	-2.63578	0	0	0	0
-4.25	-2.65288	-2.0173	0	0	0	0
-0.113	-4.24977	0.53718	0	0	0	0
-0.813	-0.11319	2.61357	0	0	0	0
-1.065	-0.81276	0.4208	0	0	0	0
-3.733	-1.06457	4.71594	0	0	0	0
-4.446	-3.73324	2.4176	0	0	0	0
-2.423	-4.44603	-1.42264	0	0	0	0
2.324	-2.42339	-0.64733	0	0	0	0
-5.481	2.32402	-0.16162	0	0	0	0
-4.067	-5.48131	-1.04974	0	0	0	0
-3.154	-4.06709	0.64153	0	0	0	0
-2.423	-3.15386	1.7594	0	0	0	0
-1.418	-2.42339	0.84115	0	0	0	0
-2.423	-1.4183	0.31486	0	0	0	0
1.2898	-2.42339	-1.66426	0	0	0	0
1.5898	1.28983	-1.38429	0	0	0	0
1.9362	1.58976	-1.12307	0	0	0	0
-2.423	1.93624	-0.92569	0	0	0	0
-0.338	-2.42339	2.50032	0	0	0	0
-0.187	-0.33808	-1.03931	0	0	0	0
0.8505	-0.18732	-0.51446	0	0	0	0
2.5913	0.85045	1.74091	0	0	0	0
3.8283	2.59131	-1.76921	0	0	0	0
1.9362	3.82828	2.79785	0	0	0	0
-5.163	1.93624	1.92664	0	0	0	0
0.5878	-5.16347	2.34085	0	0	0	0
1.4711	0.58779	1.24771	0	0	0	0
3.8283	1.47108	2.53139	0	0	0	0
7.2466	3.82828	0.57995	0	0	0	0
6.0273	7.24661	2.75584	0	0	0	0
1.8794	6.02733	0.84816	0	0	0	0
-2.772	1.87944	-1.42264	0	0	0	0
-1.151	-2.77242	-1.92559	0	0	0	0
-1.997	-1.15096	-3.28399	0	0	0	0
-2.537	-1.99654	-0.33365	0	0	0	0
3.3514	-2.53662	-1.03737	0	0	0	0
7.0687	3.35143	2.04881	0	0	0	0
4.3295	7.06872	-1.00933	0	0	0	0
-0.896	4.32945	-0.78442	0	0	0	0
-2.1	-0.89552	0.56658	0	0	0	0
3.204	-2.09969	0.32241	0	0	0	0
0.6543	3.20398	-1.173	0	0	0	0
4.637	0.65431	-2.8059	0	0	0	0
2.8513	4.63704	1.90241	0	0	0	0
2.6439	2.85127	1.84141	0	0	0	0
2.5913	2.64387	-2.39881	0	0	0	0
0.5878	2.59131	-1.74754	0	0	0	0
-1.418	0.58779	1.71837	0	0	0	0
-0.979	-1.4183	-0.82078	0	0	0	0

2.0488	-0.97944	3.16772	0	0	0	0
-2.423	2.04875	3.2578	0	0	0	0
-1.699	-2.42339	-2.06397	0	0	0	0
-1.699	-1.69937	0.03486	0	0	0	0
-0.813	-1.69937	0.78964	0	0	0	0
-2.537	-0.81276	-0.3948	0	0	0	0
2.4853	-2.53662	-1.77108	0	0	0	0
3.3514	2.48531	0.09308	0	0	0	0
3.8748	3.35143	1.29029	0	0	0	0
-1.51	3.87481	0.77442	0	0	0	0
-5.163	-1.51036	0.08066	0	0	0	0
-2.772	-5.16347	-0.1229	0	0	0	0
1.9927	-2.77242	0.31016	0	0	0	0
-1.065	1.99267	0.82952	0	0	0	0
3.2534	-1.06457	-1.7743	0	0	0	0
5.7536	3.25337	-1.79934	0	0	0	0
-3.896	5.75359	-2.90505	0	0	0	0
-1.604	-3.89552	0.56498	0	0	0	0
3.004	-1.60402	1.30828	0	0	0	0
1.0417	3.00397	-0.29646	0	0	0	0
1.3507	1.04173	-1.21514	0	0	0	0
2.5913	1.35069	-0.95491	0	0	0	0
-2.313	2.59131	-3.08187	0	0	0	0
-1.699	-2.31295	3.24096	0	0	0	0
4.0589	-1.69937	-0.55282	0	0	0	0
6.7793	4.05893	0.55499	0	0	0	0
7.6303	6.77927	0.72595	0	0	0	0
6.4461	7.63032	-0.19882	0	0	0	0
7.2819	6.44614	0.38966	0	0	0	0
6.8885	7.28193	-1.4054	0	0	0	0
2.3781	6.88853	0.81638	0	0	0	0
2.5986	0	0	-1.45681	-0.84113	0	0
2.2034	0	0	2.59857	-4.0502	0	0
0.7543	0	0	2.20344	0.14167	0	0
0.6846	0	0	0.75429	1.77112	0	0
-2.584	0	0	0.68462	-2.70082	0	0
-2.334	0	0	-2.58383	-0.90278	0	0
-4.725	0	0	-2.33371	-1.05442	0	0
-1.985	0	0	-4.72476	-2.4173	0	0
-2.098	0	0	-1.98468	-2.33371	0	0
-1.766	0	0	-2.09791	-0.98876	0	0
-0.054	0	0	-1.7664	-3.15032	0	0
-1.261	0	0	-0.05369	-1.92018	0	0
-1.358	0	0	-1.26066	0.77599	0	0
-3.295	0	0	-1.35779	-0.68525	0	0
-3.628	0	0	-3.29453	-0.33267	0	0
-0.132	0	0	-3.62839	1.22252	0	0
5.2905	0	0	-0.13226	-2.40365	0	0
6.2711	0	0	5.29053	-1.13556	0	0
5.5015	0	0	6.27111	1.06147	0	0
3.3921	0	0	5.50145	-2.59873	0	0
-0.712	0	0	3.39205	-2.72183	0	0
2.5986	0	0	-0.71225	-1.84183	0	0
-0.98	0	0	2.59857	0.72836	0	0
-1.985	0	0	-0.97959	-1.23584	0	0

-0.374	0	0	-1.98468	-1.16477	0	0
1.093	0	0	-0.37405	0.62792	0	0
0.3255	0	0	1.09302	2.2946	0	0
-4.221	0	0	0.32552	-1.26399	0	0
-3.457	0	0	-4.22074	0.36135	0	0
-2.098	0	0	-3.45681	2.2595	0	0
1.0265	0	0	-2.09791	0.95986	0	0
1.8498	0	0	1.0265	1.27672	0	0
0.1006	0	0	1.84981	-1.4629	0	0
2.375	0	0	0.10063	-1.36069	0	0
2.2034	0	0	2.37495	-1.26617	0	0
3.1868	0	0	2.20344	-0.68765	0	0
2.1455	0	0	3.18684	-1.19163	0	0
5.2905	0	0	2.14551	-1.04407	0	0
1.159	0	0	5.29053	3.39813	0	0
1.4804	0	0	1.15896	3.02358	0	0
0.3255	0	0	1.48044	3.12779	0	0
-0.626	0	0	0.32552	-0.8336	0	0
-3.14	0	0	-0.62586	1.09592	0	0
-2.851	0	0	-3.14019	0.86631	0	0
-5.043	0	0	-2.85126	-1.7322	0	0
-0.541	0	0	-5.0426	-1.4369	0	0
4.6337	0	0	-0.54073	-2.89791	0	0
-0.054	0	0	4.63372	-0.3478	0	0
-0.212	0	0	-0.05369	-1.07544	0	0
0.0239	0	0	-0.21181	-0.60486	0	0
-1.165	0	0	0.02393	-1.73504	0	0
-1.766	0	0	-1.16531	-0.69845	0	0
-2.851	0	0	-1.7664	-0.69636	0	0
-1.358	0	0	-2.85126	-2.05054	0	0
-0.292	0	0	-1.35779	-3.53382	0	0
2.4314	0	0	-0.2924	-3.19754	0	0
3.5432	0	0	2.43138	-2.8034	0	0
3.3412	0	0	3.54319	0.78538	0	0
6.4273	0	0	3.34115	-1.65616	0	0
1.7285	0	0	6.42729	0.97001	0	0
-2.584	0	0	1.72854	-0.31329	0	0
-1.261	0	0	-2.58383	-2.35374	0	0
-1.766	0	0	-1.26066	-1.22869	0	0
-3.295	0	0	-1.7664	1.88359	0	0
-1.874	0	0	-3.29453	-2.14312	0	0
1.5432	0	0	-1.87424	-0.4549	0	0
1.3534	0	0	1.54319	-0.58913	0	0
1.2892	0	0	1.35344	-1.04726	0	0
0.2514	0	0	1.28915	-1.03886	0	0
0.1006	0	0	0.25139	-3.00165	0	0
-1.985	0	0	0.10063	-0.78969	0	0
-3.295	0	0	-1.98468	0.66415	0	0
3.0826	0	0	-3.29453	1.6897	0	0
-0.132	0	0	3.08258	-0.25266	0	0
0.6143	0	0	-0.13226	-1.14222	0	0
0.6846	0	0	0.61426	-0.91525	0	0
0.7543	0	0	0.68462	1.82382	0	0
4.0313	0	0	0.75429	-0.8507	0	0
3.8873	0	0	4.03128	2.69636	0	0

3.2386	0	0	3.88727	0.95112	0	0
3.4931	0	0	3.23855	-1.86016	0	0
2.3182	0	0	3.49306	-0.20492	0	0
-2.098	0	0	2.31815	2.10786	0	0
1.9098	0	0	-2.09791	3.54304	0	0
-1.661	0	0	1.90979	5.42425	0	0
0.0239	0	0	-1.66098	4.69232	0	0
-4.725	0	0	0.02393	-0.49488	0	0
-4.725	0	0	-4.72476	-0.94942	0	0
-4.221	0	0	-4.72476	-1.49709	0	0
-4.221	0	0	-4.22074	0.77845	0	0
3.29	0	0	-4.22074	-0.19531	0	0
-1.985	0	0	3.28998	2.07953	0	0
-1.072	0	0	-1.98468	3.51736	0	0
0.3255	0	0	-1.07165	1.91613	0	0
-0.98	0	0	0.32552	-0.04394	0	0
-1.261	0	0	-0.97959	-0.23764	0	0
-2.993	0	0	-1.26066	1.05932	0	0
3.8388	0	0	-2.99271	-0.98239	0	0
3.6427	0	0	3.83882	2.30152	0	0
-1.661	0	0	3.64269	1.4457	0	0
-0.626	0	0	-1.66098	-0.24639	0	0
0.9594	0	0	-0.62586	-0.13895	0	0
0.1006	0	0	0.95939	1.53257	0	0
2.261	0	0	0.10063	-1.58025	0	0
2.4875	0	0	2.26099	1.54751	0	0
-4.457	0	0	2.48746	3.03844	0	0
-3.628	0	0	-4.45681	-1.04726	0	0
-2.214	0	0	-3.62839	0.99937	0	0
-0.212	0	0	-2.21417	1.04704	0	0
-2.457	0	0	-0.21181	-0.69527	0	0
-1.072	0	0	-2.45681	-1.81098	0	0
4.0313	0	0	-1.07165	1.87156	0	0
-0.541	0	0	4.03128	0.95037	0	0
-1.985	0	0	-0.54073	2.98219	0	0
-0.212	0	0	-1.98468	0.31782	0	0
-0.054	0	0	-0.21181	-2.59873	0	0
-0.98	0	0	-0.05369	-1.04921	0	0
-1.165	0	0	-0.97959	2.31565	0	0
-0.98	0	0	-1.16531	-1.72393	0	0
-0.8	0	0	-0.97959	0.31714	0	0
-0.374	0	0	-0.79996	0.37172	0	0
-0.541	0	0	-0.37405	-1.19575	0	0
1.3534	0	0	-0.54073	0.77664	0	0
-1.165	0	0	1.35344	0.5288	0	0
-2.584	0	0	-1.16531	-0.11162	0	0
-3.295	0	0	-2.58383	1.01235	0	0
3.7901	0	0	-3.29453	-0.13895	0	0
-1.072	0	0	3.79014	0.18942	0	0
2.375	0	0	-1.07165	-0.86668	0	0
4.5886	0	0	2.37495	1.39698	0	0
-1.072	0	0	4.58855	1.82131	0	0
-0.541	0	0	-1.07165	4.15216	0	0
-1.985	0	0	-0.54073	3.8831	0	0
2.375	0	0	-1.98468	3.2279	0	0

4.2203	0	0	2.37495	3.07317	0	0
-2.619	0	0	0	0	-2.27006	-0.43451
3.0558	0	0	0	0	-2.61909	-1.44137
1.0038	0	0	0	0	3.05576	-0.28449
-4.506	0	0	0	0	1.00377	1.64637
-0.826	0	0	0	0	-4.50613	-0.10545
1.6244	0	0	0	0	-0.82612	-1.78164
0.3289	0	0	0	0	1.62441	-3.03348
-0.418	0	0	0	0	0.32887	-4.94412
2.0896	0	0	0	0	-0.41764	-3.11722
-2.869	0	0	0	0	2.08957	-3.0825
-0.261	0	0	0	0	-2.86921	-2.59891
2.5314	0	0	0	0	-0.26145	-1.81629
0.3289	0	0	0	0	2.53142	-1.12005
0.3992	0	0	0	0	0.32887	-1.52858
3.2578	0	0	0	0	0.39923	-2.17955
0.674	0	0	0	0	3.2578	-2.22057
1.6244	0	0	0	0	0.674	-2.80678
4.6596	0	0	0	0	1.62441	0.6975
-0.034	0	0	0	0	4.65956	1.86724
-0.998	0	0	0	0	-0.03399	0.16899
-0.911	0	0	0	0	-0.99763	-0.52699
1.0038	0	0	0	0	-0.91124	-1.74233
-5.01	0	0	0	0	1.00377	1.52576
-1.265	0	0	0	0	-5.01014	0.77944
-0.034	0	0	0	0	-1.26497	-1.52462
0.8076	0	0	0	0	-0.03399	0.45789
-4.293	0	0	0	0	0.80764	2.43729
-4.506	0	0	0	0	-4.29271	1.04512
-0.418	0	0	0	0	-4.50613	0.50404
-0.185	0	0	0	0	-0.41764	0.73991
0.674	0	0	0	0	-0.18476	0.00328
-1.946	0	0	0	0	0.674	1.45297
-0.185	0	0	0	0	-1.94636	0.43518
-2.27	0	0	0	0	-0.18476	-1.218
2.6918	0	0	0	0	-2.27006	1.05634
-2.27	0	0	0	0	2.69179	-0.93183
-1.357	0	0	0	0	-2.27006	1.53682
2.6918	0	0	0	0	-1.35703	0.7072
2.7446	0	0	0	0	2.69179	4.6975
1.0681	0	0	0	0	2.74464	2.23074
-2.052	0	0	0	0	1.06805	3.33398
-0.659	0	0	0	0	-2.05178	0.35505
-0.911	0	0	0	0	-0.65943	1.11271
-4.506	0	0	0	0	-0.91124	-0.24816
-1.174	0	0	0	0	-4.50613	-0.90476
-1.546	0	0	0	0	-1.17443	-3.37098
1.0038	0	0	0	0	-1.54604	-2.39525
2.7446	0	0	0	0	1.00377	1.46718
1.4432	0	0	0	0	2.74464	-2.4746
-1.265	0	0	0	0	1.44316	-1.43235
-1.357	0	0	0	0	-1.26497	-1.09059
-0.497	0	0	0	0	-1.35703	-0.60259
-0.034	0	0	0	0	-0.4972	-1.33096
-3.914	0	0	0	0	-0.03399	-3.45918

-3.742	0	0	0	0	-3.91377	-2.25583
-1.357	0	0	0	0	-3.7422	-1.47264
1.684	0	0	0	0	-1.35703	-0.90919
-2.5	0	0	0	0	1.68395	1.715
3.0046	0	0	0	0	-2.49955	1.26419
3.1067	0	0	0	0	3.0046	2.68136
-0.261	0	0	0	0	3.10666	-1.00235
-0.034	0	0	0	0	-0.26145	-3.51493
1.4432	0	0	0	0	-0.03399	-1.84202
1.1951	0	0	0	0	1.44316	0.27881
3.1573	0	0	0	0	1.19506	-4.38792
1.9756	0	0	0	0	3.1573	-2.97067
0.3289	0	0	0	0	1.9756	-0.80534
-0.659	0	0	0	0	0.32887	-0.53497
-3.58	0	0	0	0	-0.65943	-0.06457
-2.869	0	0	0	0	-3.57992	-1.086
-0.261	0	0	0	0	-2.86921	0.69523
1.4432	0	0	0	0	-0.26145	-0.19746
1.9181	0	0	0	0	1.44316	-0.67915
-1.946	0	0	0	0	1.91806	0.3296
-1.643	0	0	0	0	-1.94636	-0.23517
2.7972	0	0	0	0	-1.64318	0.21347
-4.293	0	0	0	0	2.7972	0.76753
1.5644	0	0	0	0	-4.29271	1.6728
-0.034	0	0	0	0	1.56443	3.92978
1.4432	0	0	0	0	-0.03399	2.91175
-0.998	0	0	0	0	1.44316	-0.96246
2.7446	0	0	0	0	-0.99763	2.04043
3.2578	0	0	0	0	2.74464	1.89462
3.6019	0	0	0	0	3.2578	0.86519
3.3573	0	0	0	0	3.60189	4.5782
-2.869	0	0	0	0	3.35731	2.18317
0.8736	0	0	0	0	-2.86921	0.95169
-1.843	0	0	0	0	0.87358	-3.74859
3.5534	0	0	0	0	-1.84322	-2.93786
2.146	0	0	0	0	3.55343	-3.10864
0.8076	0	0	0	0	2.146	-3.37868
-0.034	0	0	0	0	0.80764	3.32071
-0.497	0	0	0	0	-0.03399	2.54202
0.8076	0	0	0	0	-0.4972	1.6289
1.6244	0	0	0	0	0.80764	-0.285
-1.085	0	0	0	0	1.62441	-1.53964
-2.619	0	0	0	0	-1.08534	0.97166
-0.034	0	0	0	0	-2.61909	-1.1692
0.0401	0	0	0	0	-0.03399	4.23793
-3.137	0	0	0	0	0.04013	3.24698
-2.869	0	0	0	0	-3.13664	0.49144
2.4774	0	0	0	0	-2.86921	0.98273
-1.742	0	0	0	0	2.47735	0.77359
4.0745	0	0	0	0	-1.7422	-0.65884
4.0281	0	0	0	0	4.07446	0.64077
0.3289	0	0	0	0	4.02813	2.2681
3.6981	0	0	0	0	0.32887	-3.4401
3.7935	0	0	0	0	3.69811	-2.66388
-0.578	0	0	0	0	3.79346	-1.95677

-1.085	0	0	0	0	-0.57778	-0.51229
1.2578	0	0	0	0	-1.08534	-2.49672
-1.451	0	0	0	0	1.2578	0.70683
2.0896	0	0	0	0	-1.45069	3.69135
2.146	0	0	0	0	2.08957	1.66704
-0.034	0	0	0	0	2.146	-1.74752
0.674	0	0	0	0	-0.03399	-2.68764
2.6386	0	0	0	0	0.674	-1.41305
-2.383	0	0	0	0	2.63864	0.50654
-2.619	0	0	0	0	-2.3833	-1.11494
-5.01	0	0	0	0	-2.61909	1.13689
1.504	0	0	0	0	-5.01014	2.47682
3.1573	0	0	0	0	1.50402	-2.13479
-1.946	0	0	0	0	3.1573	-1.07238
-1.265	0	0	0	0	-1.94636	2.17871
0.674	0	0	0	0	-1.26497	-0.06179
-2.869	0	0	0	0	0.674	-0.61657
2.6918	0	0	0	0	-2.86921	-0.35161
-0.034	0	0	0	0	2.69179	0.7386
-1.265	0	0	0	0	-0.03399	-1.38551
-3.137	0	0	0	0	-1.26497	3.21694
0.674	0	0	0	0	-3.13664	5.68391
1.3201	0	0	0	0	0.674	3.27933
-0.826	0	0	0	0	1.32006	2.9527
-0.742	0	0	0	0	-0.82612	2.64862
-0.034	0	0	0	0	-0.7422	4.63174

Lampiran B.11

Di bawah ini adalah tabel matriks dari *worksheet* MINITAB 14 untuk pembentukan model GSTAR orde 1 dengan bobot tidak seragam.

Y_t	$X1_{t-1}$	$FX1_{t-1}$	$X2_{t-1}$	$FX2_{t-1}$	$X3_{t-1}$	$FX3_{t-1}$
-5.48131	0.58779	-1.72789	0	0	0	0
-2.77242	-5.48131	0.85935	0	0	0	0
2.53846	-2.77242	2.48755	0	0	0	0
-0.89552	2.53846	0.83745	0	0	0	0
-0.97944	-0.89552	-1.04563	0	0	0	0
-3.73324	-0.97944	-1.99792	0	0	0	0
-5.16347	-3.73324	-1.01434	0	0	0	0
-4.24977	-5.16347	-3.04022	0	0	0	0
-4.06709	-4.24977	-1.46233	0	0	0	0
-3.43142	-4.06709	-0.70209	0	0	0	0
-3.5789	-3.43142	-2.134	0	0	0	0
-0.97944	-3.5789	-0.12294	0	0	0	0
-1.69937	-0.97944	0.00337	0	0	0	0
-1.06457	-1.69937	-0.79557	0	0	0	0
-0.81276	-1.06457	-2.06328	0	0	0	0
-5.48131	-0.81276	-1.33299	0	0	0	0
-3.89552	-5.48131	0.1365	0	0	0	0
-2.53662	-3.89552	4.06849	0	0	0	0
-5.16347	-2.53662	5.73393	0	0	0	0
-4.44603	-5.16347	3.6563	0	0	0	0
-2.77242	-4.44603	1.92882	0	0	0	0
0.45295	-2.77242	-0.77858	0	0	0	0
2.53846	0.45295	2.06697	0	0	0	0
-1.06457	2.53846	-2.32311	0	0	0	0
1.28983	-1.06457	-1.74477	0	0	0	0
3.78156	1.28983	-0.2607	0	0	0	0
1.76473	3.78156	0.99789	0	0	0	0
5.22883	1.76473	-1.21389	0	0	0	0
4.93664	5.22883	-4.31587	0	0	0	0
2.10448	4.93664	-2.44375	0	0	0	0
1.87944	2.10448	-1.46019	0	0	0	0
-0.97944	1.87944	0.909	0	0	0	0
-2.53662	-0.97944	0.58442	0	0	0	0
-0.26227	-2.53662	0.0055	0	0	0	0
-4.06709	-0.26227	0.82661	0	0	0	0
-0.11319	-4.06709	2.36622	0	0	0	0
-0.73111	-0.11319	1.36787	0	0	0	0
4.10448	-0.73111	0.978	0	0	0	0
3.30252	4.10448	4.42428	0	0	0	0
5.18752	3.30252	1.68752	0	0	0	0
0.38459	5.18752	1.34298	0	0	0	0
2.85127	0.38459	-0.46691	0	0	0	0
2.64387	2.85127	-0.63705	0	0	0	0
1.04173	2.64387	-2.39721	0	0	0	0
-1.69937	1.04173	-3.40288	0	0	0	0
-4.24977	-1.69937	-3.75321	0	0	0	0
-1.69937	-4.24977	-0.87584	0	0	0	0
-4.89552	-1.69937	3.42374	0	0	0	0
-2.65288	-4.89552	0.87909	0	0	0	0

-2.20511	-2.65288	0.33984	0	0	0	0
-0.03987	-2.20511	-0.4057	0	0	0	0
-0.89552	-0.03987	-1.22922	0	0	0	0
-4.06709	-0.89552	-1.34333	0	0	0	0
-3.15386	-4.06709	-1.91217	0	0	0	0
-2.65288	-3.15386	-2.20978	0	0	0	0
-4.24977	-2.65288	-1.44233	0	0	0	0
-0.11319	-4.24977	1.16858	0	0	0	0
-0.81276	-0.11319	2.92344	0	0	0	0
-1.06457	-0.81276	1.39425	0	0	0	0
-3.73324	-1.06457	5.28639	0	0	0	0
-4.44603	-3.73324	2.18791	0	0	0	0
-2.42339	-4.44603	-1.8097	0	0	0	0
2.32402	-2.42339	-0.85177	0	0	0	0
-5.48131	2.32402	-0.69655	0	0	0	0
-4.06709	-5.48131	-1.798	0	0	0	0
-3.15386	-4.06709	-0.19706	0	0	0	0
-2.42339	-3.15386	1.68733	0	0	0	0
-1.4183	-2.42339	1.01192	0	0	0	0
-2.42339	-1.4183	0.63963	0	0	0	0
1.28983	-2.42339	-1.02571	0	0	0	0
1.58976	1.28983	-0.88932	0	0	0	0
1.93624	1.58976	-1.41027	0	0	0	0
-2.42339	1.93624	-1.7153	0	0	0	0
-0.33808	-2.42339	2.69441	0	0	0	0
-0.18732	-0.33808	-0.73696	0	0	0	0
0.85045	-0.18732	-0.13822	0	0	0	0
2.59131	0.85045	1.38881	0	0	0	0
3.82828	2.59131	-0.92804	0	0	0	0
1.93624	3.82828	3.20899	0	0	0	0
-5.16347	1.93624	2.58018	0	0	0	0
0.58779	-5.16347	2.64008	0	0	0	0
1.47108	0.58779	1.99616	0	0	0	0
3.82828	1.47108	2.46031	0	0	0	0
7.24661	3.82828	-0.31267	0	0	0	0
6.02733	7.24661	2.47382	0	0	0	0
1.87944	6.02733	0.01178	0	0	0	0
-2.77242	1.87944	-0.94045	0	0	0	0
-1.15096	-2.77242	-2.85865	0	0	0	0
-1.99654	-1.15096	-3.76425	0	0	0	0
-2.53662	-1.99654	-1.62935	0	0	0	0
3.35143	-2.53662	-2.0985	0	0	0	0
7.06872	3.35143	2.46253	0	0	0	0
4.32945	7.06872	-1.33445	0	0	0	0
-0.89552	4.32945	-0.88016	0	0	0	0
-2.09969	-0.89552	0.48622	0	0	0	0
3.20398	-2.09969	-0.11159	0	0	0	0
0.65431	3.20398	-1.20222	0	0	0	0
4.63704	0.65431	-2.86817	0	0	0	0
2.85127	4.63704	2.54788	0	0	0	0
2.64387	2.85127	2.44184	0	0	0	0
2.59131	2.64387	-2.15287	0	0	0	0
0.58779	2.59131	-1.37364	0	0	0	0
-1.4183	0.58779	1.46537	0	0	0	0
-0.97944	-1.4183	-0.51365	0	0	0	0

2.04875	-0.97944	2.86548	0	0	0	0
-2.42339	2.04875	3.00102	0	0	0	0
-1.69937	-2.42339	-2.86158	0	0	0	0
-1.69937	-1.69937	-1.18622	0	0	0	0
-0.81276	-1.69937	-0.21163	0	0	0	0
-2.53662	-0.81276	-0.3338	0	0	0	0
2.48531	-2.53662	-1.99966	0	0	0	0
3.35143	2.48531	-0.29516	0	0	0	0
3.87481	3.35143	2.20395	0	0	0	0
-1.51036	3.87481	0.33603	0	0	0	0
-5.16347	-1.51036	-0.60778	0	0	0	0
-2.77242	-5.16347	-0.15254	0	0	0	0
1.99267	-2.77242	0.18888	0	0	0	0
-1.06457	1.99267	0.22649	0	0	0	0
3.25337	-1.06457	-1.57131	0	0	0	0
5.75359	3.25337	-1.52609	0	0	0	0
-3.89552	5.75359	-2.20335	0	0	0	0
-1.60402	-3.89552	0.25197	0	0	0	0
3.00397	-1.60402	0.69194	0	0	0	0
1.04173	3.00397	0.2535	0	0	0	0
1.35069	1.04173	-1.19853	0	0	0	0
2.59131	1.35069	-1.49789	0	0	0	0
-2.31295	2.59131	-3.15276	0	0	0	0
-1.69937	-2.31295	3.42402	0	0	0	0
4.05893	-1.69937	-0.72576	0	0	0	0
6.77927	4.05893	1.16164	0	0	0	0
7.63032	6.77927	2.01348	0	0	0	0
6.44614	7.63032	-0.48976	0	0	0	0
7.28193	6.44614	0.07953	0	0	0	0
6.88853	7.28193	-1.59849	0	0	0	0
2.3781	6.88853	1.3359	0	0	0	0
2.59857	0	0	-1.45681	-0.84113	0	0
2.20344	0	0	2.59857	-4.0502	0	0
0.75429	0	0	2.20344	0.14167	0	0
0.68462	0	0	0.75429	1.77112	0	0
-2.58383	0	0	0.68462	-2.70082	0	0
-2.33371	0	0	-2.58383	-0.90278	0	0
-4.72476	0	0	-2.33371	-1.05442	0	0
-1.98468	0	0	-4.72476	-2.4173	0	0
-2.09791	0	0	-1.98468	-2.33371	0	0
-1.7664	0	0	-2.09791	-0.98876	0	0
-0.05369	0	0	-1.7664	-3.15032	0	0
-1.26066	0	0	-0.05369	-1.92018	0	0
-1.35779	0	0	-1.26066	0.77599	0	0
-3.29453	0	0	-1.35779	-0.68525	0	0
-3.62839	0	0	-3.29453	-0.33267	0	0
-0.13226	0	0	-3.62839	1.22252	0	0
5.29053	0	0	-0.13226	-2.40365	0	0
6.27111	0	0	5.29053	-1.13556	0	0
5.50145	0	0	6.27111	1.06147	0	0
3.39205	0	0	5.50145	-2.59873	0	0
-0.71225	0	0	3.39205	-2.72183	0	0
2.59857	0	0	-0.71225	-1.84183	0	0
-0.97959	0	0	2.59857	0.72836	0	0
-1.98468	0	0	-0.97959	-1.23584	0	0

-0.37405	0	0	-1.98468	-1.16477	0	0
1.09302	0	0	-0.37405	0.62792	0	0
0.32552	0	0	1.09302	2.2946	0	0
-4.22074	0	0	0.32552	-1.26399	0	0
-3.45681	0	0	-4.22074	0.36135	0	0
-2.09791	0	0	-3.45681	2.2595	0	0
1.0265	0	0	-2.09791	0.95986	0	0
1.84981	0	0	1.0265	1.27672	0	0
0.10063	0	0	1.84981	-1.4629	0	0
2.37495	0	0	0.10063	-1.36069	0	0
2.20344	0	0	2.37495	-1.26617	0	0
3.18684	0	0	2.20344	-0.68765	0	0
2.14551	0	0	3.18684	-1.19163	0	0
5.29053	0	0	2.14551	-1.04407	0	0
1.15896	0	0	5.29053	3.39813	0	0
1.48044	0	0	1.15896	3.02358	0	0
0.32552	0	0	1.48044	3.12779	0	0
-0.62586	0	0	0.32552	-0.8336	0	0
-3.14019	0	0	-0.62586	1.09592	0	0
-2.85126	0	0	-3.14019	0.86631	0	0
-5.0426	0	0	-2.85126	-1.7322	0	0
-0.54073	0	0	-5.0426	-1.4369	0	0
4.63372	0	0	-0.54073	-2.89791	0	0
-0.05369	0	0	4.63372	-0.3478	0	0
-0.21181	0	0	-0.05369	-1.07544	0	0
0.02393	0	0	-0.21181	-0.60486	0	0
-1.16531	0	0	0.02393	-1.73504	0	0
-1.7664	0	0	-1.16531	-0.69845	0	0
-2.85126	0	0	-1.7664	-0.69636	0	0
-1.35779	0	0	-2.85126	-2.05054	0	0
-0.2924	0	0	-1.35779	-3.53382	0	0
2.43138	0	0	-0.2924	-3.19754	0	0
3.54319	0	0	2.43138	-2.8034	0	0
3.34115	0	0	3.54319	0.78538	0	0
6.42729	0	0	3.34115	-1.65616	0	0
1.72854	0	0	6.42729	0.97001	0	0
-2.58383	0	0	1.72854	-0.31329	0	0
-1.26066	0	0	-2.58383	-2.35374	0	0
-1.7664	0	0	-1.26066	-1.22869	0	0
-3.29453	0	0	-1.7664	1.88359	0	0
-1.87424	0	0	-3.29453	-2.14312	0	0
1.54319	0	0	-1.87424	-0.4549	0	0
1.35344	0	0	1.54319	-0.58913	0	0
1.28915	0	0	1.35344	-1.04726	0	0
0.25139	0	0	1.28915	-1.03886	0	0
0.10063	0	0	0.25139	-3.00165	0	0
-1.98468	0	0	0.10063	-0.78969	0	0
-3.29453	0	0	-1.98468	0.66415	0	0
3.08258	0	0	-3.29453	1.6897	0	0
-0.13226	0	0	3.08258	-0.25266	0	0
0.61426	0	0	-0.13226	-1.14222	0	0
0.68462	0	0	0.61426	-0.91525	0	0
0.75429	0	0	0.68462	1.82382	0	0
4.03128	0	0	0.75429	-0.8507	0	0
3.88727	0	0	4.03128	2.69636	0	0

3.23855	0	0	3.88727	0.95112	0	0
3.49306	0	0	3.23855	-1.86016	0	0
2.31815	0	0	3.49306	-0.20492	0	0
-2.09791	0	0	2.31815	2.10786	0	0
1.90979	0	0	-2.09791	3.54304	0	0
-1.66098	0	0	1.90979	5.42425	0	0
0.02393	0	0	-1.66098	4.69232	0	0
-4.72476	0	0	0.02393	-0.49488	0	0
-4.72476	0	0	-4.72476	-0.94942	0	0
-4.22074	0	0	-4.72476	-1.49709	0	0
-4.22074	0	0	-4.22074	0.77845	0	0
3.28998	0	0	-4.22074	-0.19531	0	0
-1.98468	0	0	3.28998	2.07953	0	0
-1.07165	0	0	-1.98468	3.51736	0	0
0.32552	0	0	-1.07165	1.91613	0	0
-0.97959	0	0	0.32552	-0.04394	0	0
-1.26066	0	0	-0.97959	-0.23764	0	0
-2.99271	0	0	-1.26066	1.05932	0	0
3.83882	0	0	-2.99271	-0.98239	0	0
3.64269	0	0	3.83882	2.30152	0	0
-1.66098	0	0	3.64269	1.4457	0	0
-0.62586	0	0	-1.66098	-0.24639	0	0
0.95939	0	0	-0.62586	-0.13895	0	0
0.10063	0	0	0.95939	1.53257	0	0
2.26099	0	0	0.10063	-1.58025	0	0
2.48746	0	0	2.26099	1.54751	0	0
-4.45681	0	0	2.48746	3.03844	0	0
-3.62839	0	0	-4.45681	-1.04726	0	0
-2.21417	0	0	-3.62839	0.99937	0	0
-0.21181	0	0	-2.21417	1.04704	0	0
-2.45681	0	0	-0.21181	-0.69527	0	0
-1.07165	0	0	-2.45681	-1.81098	0	0
4.03128	0	0	-1.07165	1.87156	0	0
-0.54073	0	0	4.03128	0.95037	0	0
-1.98468	0	0	-0.54073	2.98219	0	0
-0.21181	0	0	-1.98468	0.31782	0	0
-0.05369	0	0	-0.21181	-2.59873	0	0
-0.97959	0	0	-0.05369	-1.04921	0	0
-1.16531	0	0	-0.97959	2.31565	0	0
-0.97959	0	0	-1.16531	-1.72393	0	0
-0.79996	0	0	-0.97959	0.31714	0	0
-0.37405	0	0	-0.79996	0.37172	0	0
-0.54073	0	0	-0.37405	-1.19575	0	0
1.35344	0	0	-0.54073	0.77664	0	0
-1.16531	0	0	1.35344	0.5288	0	0
-2.58383	0	0	-1.16531	-0.11162	0	0
-3.29453	0	0	-2.58383	1.01235	0	0
3.79014	0	0	-3.29453	-0.13895	0	0
-1.07165	0	0	3.79014	0.18942	0	0
2.37495	0	0	-1.07165	-0.86668	0	0
4.58855	0	0	2.37495	1.39698	0	0
-1.07165	0	0	4.58855	1.82131	0	0
-0.54073	0	0	-1.07165	4.15216	0	0
-1.98468	0	0	-0.54073	3.8831	0	0
2.37495	0	0	-1.98468	3.2279	0	0

4.22027	0	0	2.37495	3.07317	0	0
-2.61909	0	0	0	0	-2.27006	-0.77528
3.05576	0	0	0	0	-2.61909	-0.09472
1.00377	0	0	0	0	3.05576	0.54482
-4.50613	0	0	0	0	1.00377	1.34901
-0.82612	0	0	0	0	-4.50613	0.1579
1.62441	0	0	0	0	-0.82612	-2.04903
0.32887	0	0	0	0	1.62441	-2.80022
-0.41764	0	0	0	0	0.32887	-4.871
2.08957	0	0	0	0	-0.41764	-2.73971
-2.86921	0	0	0	0	2.08957	-2.75431
-0.26145	0	0	0	0	-2.86921	-2.3214
2.53142	0	0	0	0	-0.26145	-1.22876
0.32887	0	0	0	0	2.53142	-1.16692
0.39923	0	0	0	0	0.32887	-1.47165
3.2578	0	0	0	0	0.39923	-2.55121
0.674	0	0	0	0	3.2578	-2.68984
1.62441	0	0	0	0	0.674	-1.91527
4.65956	0	0	0	0	1.62441	2.22851
-0.03399	0	0	0	0	4.65956	3.3352
-0.99763	0	0	0	0	-0.03399	1.94648
-0.91124	0	0	0	0	-0.99763	0.77935
1.00377	0	0	0	0	-0.91124	-1.39897
-5.01014	0	0	0	0	1.00377	1.88336
-1.26497	0	0	0	0	-5.01014	0.1931
-0.03399	0	0	0	0	-1.26497	-1.67797
0.80764	0	0	0	0	-0.03399	0.18058
-4.29271	0	0	0	0	0.80764	1.9892
-4.50613	0	0	0	0	-4.29271	0.80526
-0.41764	0	0	0	0	-4.50613	-1.07089
-0.18476	0	0	0	0	-0.41764	-0.659
0.674	0	0	0	0	-0.18476	-0.69712
-1.94636	0	0	0	0	0.674	1.31082
-0.18476	0	0	0	0	-1.94636	0.90673
-2.27006	0	0	0	0	-0.18476	-0.77846
2.69179	0	0	0	0	-2.27006	1.49587
-2.27006	0	0	0	0	2.69179	0.11326
-1.35703	0	0	0	0	-2.27006	2.08683
2.69179	0	0	0	0	-1.35703	1.18664
2.74464	0	0	0	0	2.69179	4.89518
1.06805	0	0	0	0	2.74464	1.87348
-2.05178	0	0	0	0	1.06805	2.71614
-0.65943	0	0	0	0	-2.05178	0.34521
-0.91124	0	0	0	0	-0.65943	0.53318
-4.50613	0	0	0	0	-0.91124	-1.21217
-1.17443	0	0	0	0	-4.50613	-1.5536
-1.54604	0	0	0	0	-1.17443	-3.92819
1.00377	0	0	0	0	-1.54604	-1.77708
2.74464	0	0	0	0	1.00377	2.52269
1.44316	0	0	0	0	2.74464	-1.66763
-1.26497	0	0	0	0	1.44316	-1.0255
-1.35703	0	0	0	0	-1.26497	-0.71908
-0.4972	0	0	0	0	-1.35703	-0.79016
-0.03399	0	0	0	0	-0.4972	-1.47611
-3.91377	0	0	0	0	-0.03399	-3.25654

-3.7422	0	0	0	0	-3.91377	-1.95648
-1.35703	0	0	0	0	-3.7422	-1.07923
1.68395	0	0	0	0	-1.35703	0.20433
-2.49955	0	0	0	0	1.68395	2.32439
3.0046	0	0	0	0	-2.49955	1.95651
3.10666	0	0	0	0	3.0046	3.93
-0.26145	0	0	0	0	3.10666	-0.09205
-0.03399	0	0	0	0	-0.26145	-3.20456
1.44316	0	0	0	0	-0.03399	-1.64824
1.19506	0	0	0	0	1.44316	-0.40292
3.1573	0	0	0	0	1.19506	-4.02346
1.9756	0	0	0	0	3.1573	-2.60519
0.32887	0	0	0	0	1.9756	-0.0225
-0.65943	0	0	0	0	0.32887	0.0945
-3.57992	0	0	0	0	-0.65943	0.38667
-2.86921	0	0	0	0	-3.57992	-0.6402
-0.26145	0	0	0	0	-2.86921	0.49703
1.44316	0	0	0	0	-0.26145	-0.7932
1.91806	0	0	0	0	1.44316	-1.55094
-1.94636	0	0	0	0	1.91806	1.24726
-1.64318	0	0	0	0	-1.94636	-0.20087
2.7972	0	0	0	0	-1.64318	0.34706
-4.29271	0	0	0	0	2.7972	0.73989
1.56443	0	0	0	0	-4.29271	1.36663
-0.03399	0	0	0	0	1.56443	3.96361
1.44316	0	0	0	0	-0.03399	3.23693
-0.99763	0	0	0	0	1.44316	0.43787
2.74464	0	0	0	0	-0.99763	2.52464
3.2578	0	0	0	0	2.74464	2.03579
3.60189	0	0	0	0	3.2578	-0.12251
3.35731	0	0	0	0	3.60189	3.68873
-2.86921	0	0	0	0	3.35731	0.90179
0.87358	0	0	0	0	-2.86921	0.64243
-1.84322	0	0	0	0	0.87358	-4.07398
3.55343	0	0	0	0	-1.84322	-3.53349
2.146	0	0	0	0	3.55343	-3.47934
0.80764	0	0	0	0	2.146	-3.65937
-0.03399	0	0	0	0	0.80764	3.31046
-0.4972	0	0	0	0	-0.03399	1.03312
0.80764	0	0	0	0	-0.4972	0.72872
1.62441	0	0	0	0	0.80764	-0.0815
-1.08534	0	0	0	0	1.62441	-1.35295
-2.61909	0	0	0	0	-1.08534	0.22755
-0.03399	0	0	0	0	-2.61909	-1.77704
0.04013	0	0	0	0	-0.03399	4.10489
-3.13664	0	0	0	0	0.04013	3.37889
-2.86921	0	0	0	0	-3.13664	-0.22603
2.47735	0	0	0	0	-2.86921	0.44653
-1.7422	0	0	0	0	2.47735	0.83552
4.07446	0	0	0	0	-1.7422	-0.40568
4.02813	0	0	0	0	4.07446	1.18084
0.32887	0	0	0	0	4.02813	2.34122
3.69811	0	0	0	0	0.32887	-3.779
3.79346	0	0	0	0	3.69811	-2.98538
-0.57778	0	0	0	0	3.79346	-2.04257

-1.08534	0	0	0	0	-0.57778	-0.41213
1.2578	0	0	0	0	-1.08534	-2.48342
-1.45069	0	0	0	0	1.2578	0.114
2.08957	0	0	0	0	-1.45069	3.80466
2.146	0	0	0	0	2.08957	0.93111
-0.03399	0	0	0	0	2.146	-1.82657
0.674	0	0	0	0	-0.03399	-1.86237
2.63864	0	0	0	0	0.674	-0.95993
-2.3833	0	0	0	0	2.63864	0.01117
-2.61909	0	0	0	0	-2.3833	-1.13173
-5.01014	0	0	0	0	-2.61909	0.4314
1.50402	0	0	0	0	-5.01014	1.38456
3.1573	0	0	0	0	1.50402	-1.54787
-1.94636	0	0	0	0	3.1573	-0.89516
-1.26497	0	0	0	0	-1.94636	1.90362
0.674	0	0	0	0	-1.26497	-0.42963
-2.86921	0	0	0	0	0.674	-1.27232
2.69179	0	0	0	0	-2.86921	-1.33259
-0.03399	0	0	0	0	2.69179	1.75578
-1.26497	0	0	0	0	-0.03399	-1.28089
-3.13664	0	0	0	0	-1.26497	2.93628
0.674	0	0	0	0	-3.13664	5.31879
1.32006	0	0	0	0	0.674	1.82901
-0.82612	0	0	0	0	1.32006	1.78823
-0.7422	0	0	0	0	-0.82612	1.10419
-0.03399	0	0	0	0	-0.7422	3.87947