

Column1	Column2	Column3	Column4	Column5						d)	
Time	Mon/Yr	Sales	CMA	Ratio	SI	ASI	Forecast,t	Error	Error ²	% Error	Forecast, S
1	Jan-96	4964			0.909229862	0.902332276	5638.129	674.1286	454449.3	14%	5106.936
2	Feb-96	4968			0.901462687	0.894624024	5670.566	702.5658	493598.7	14%	5110.753
3	Mar-96	5601			0.982182261	0.974731244	5703.003	102.003	10404.61	2%	5598.514
4	Apr-96	5454			0.950329017	0.943119645	5735.44	281.4402	79208.6	5%	5434.803
5	May-96	5721			0.999716498	0.992132464	5767.877	46.87745	2197.495	1%	5721.004
6	Jun-96	5690			0.996630508	0.989069884	5800.315	110.3147	12169.33	2%	5662.694
7	Jul-96	5804	5822.416667	0.996836938	1.021552055	1.013802371	5832.752	28.75188	826.6707	0%	5790.663
8	Aug-96	6040	5858.958333	1.030899975	1.063039615	1.054975199	5865.189	174.8109	30558.85	3%	6058.099
9	Sep-96	5843	5889.416667	0.992118631	0.983605601	0.976143787	5897.626	54.62632	2984.035	1%	5819.267
10	Oct-96	6087	5915.25	1.029035121	1.020223247	1.012483644	5930.064	156.9365	24629.05	3%	6059.634
11	Nov-96	6469	5944.416667	1.088248076	1.089910857	1.081642591	5962.501	506.4992	25654.15	8%	6489.549
12	Dec-96	7002	5974.083333	1.17026266	1.173847897	1.16494287	5994.938	1007.062	1014174	14%	7031.448
13	Jan-97	5416	6001.291667	0.902472384	Sum	Sum	6027.375	611.3752	373779.6	11%	5459.51
14	Feb-97	5393	6034.041667	0.893762473	12.0917301	12	6059.812	666.8124	444638.8	12%	5461.572
15	Mar-97	5907	6070.083333	0.973133263			6092.25	185.2496	34317.42	3%	5980.629
16	Apr-97	5768	6103.041667	0.94510251			6124.687	356.6868	127225.5	6%	5803.646
17	May-97	6107	6138.958333	0.994794177			6157.124	50.12406	2512.421	1%	6107.087
18	Jun-97	6016	6184.375	0.972774128			6189.561	173.5613	30123.52	3%	6042.705
19	Jul-97	6131	6229.083333	0.98425397			6221.998	90.99849	8280.726	1%	6177.101
20	Aug-97	6499	6265.958333	1.037191704			6254.436	244.5643	59811.69	4%	6460.148
21	Sep-97	6249	6301.791667	0.991622753			6286.873	37.87293	1434.359	1%	6203.342
22	Oct-97	6472	6335.541667	1.021538542			6319.31	152.6899	23314.19	2%	6457.385
23	Nov-97	6946	6365.125	1.091259009			6351.747	594.2526	353136.2	9%	6913.203
24	Dec-97	7615	6395.375	1.19070422			6384.185	1230.815	1514907	16%	7487.995
25	Jan-98	5876	6426.916667	0.91399536			6416.622	540.6218	292271.9	9%	5812.084
26	Feb-98	5818	6456.958333	0.901043448			6449.059	631.059	398235.5	11%	5812.391
27	Mar-98	6342	6477.583333	0.97906884			6481.496	139.4962	19459.2	2%	6362.743
28	Apr-98	6143	6501.291667	0.944889157			6513.933	370.9335	137591.6	6%	6172.489
29	May-98	6442	6532.458333	0.986152482			6546.371	104.3707	10893.24	2%	6493.171
30	Jun-98	6407	6569.083333	0.975326339			6578.808	171.8079	29517.95	3%	6422.717
31	Jul-98	6545	6596.125	0.992249237			6611.245	66.24511	4388.414	1%	6563.539
32	Aug-98	6758	6619.208333	1.020968016			6643.682	114.3177	13068.53	2%	6862.197
33	Sep-98	6485	6653.333333	0.974699399			6676.12	191.1195	36526.68	3%	6587.417
34	Oct-98	6805	6690.583333	1.01710115			6708.557	96.44324	9301.299	1%	6855.137
35	Nov-98	7361	6728.916667	1.093935378			6740.994	620.006	384407.5	8%	7336.857
36	Dec-98	8079	6770.125	1.193330995			6773.431	1305.569	1704510	16%	7944.541
37	Jan-99	6061	6811.708333	0.889791474			6805.868	744.8684	554829	12%	6164.658
38	Feb-99	6187	6862.458333	0.901571959			6838.306	651.3056	424199	11%	6163.211
39	Mar-99	6792	6927.166667	0.980487453			6870.743	78.74285	6200.436	1%	6744.858
40	Apr-99	6587	6993.25	0.941908269			6903.18	316.1801	99969.83	5%	6541.333
41	May-99	6918	7052.333333	0.980951931			6935.617	17.61728	310.3687	0%	6879.254
42	Jun-99	6920	7106.5	0.97375642			6968.055	48.0545	2309.235	1%	6802.728
43	Jul-99	7030	7163.291667	0.9813924			7000.492	29.50828	870.7386	0%	6949.977
44	Aug-99	7491	7220.583333	1.037450806			7032.929	458.0711	209829.1	6%	7264.246
45	Sep-99	7305	7278.875	1.003589154			7065.366	239.6338	57424.38	3%	6971.492
46	Oct-99	7571	7340.75	1.031366005			7097.803	473.1966	223915	6%	7252.888
47	Nov-99	8013	7403.791667	1.08228329			7130.241	882.7594	779264.2	11%	7760.51
48	Dec-99	8727	7460.666667	1.169734608			7162.678	1564.322	2447104	18%	8401.087
49	Jan-00	6776	7512.333333	0.901983405			7195.115	419.115	175657.4	6%	6517.232
50	Feb-00	6847	7559.958333	0.905692822			7227.552	380.5522	144820	6%	6514.03
51	Mar-00	7531	7595	0.991573404			7259.989	271.0105	73446.71	4%	7126.973
52	Apr-00	7333	7623.833333	0.961852087			7292.427	40.57332	1646.194	1%	6910.176
53	May-00	7685	7650.333333	1.004531393			7324.864	360.1361	129698	5%	7265.337
54	Jun-00	7518	7654.25	0.982199432			7357.301	160.6989	25824.13	2%	7182.739
55	Jul-00	7672	7655.875	1.002106226			7389.738	282.2817	79671.65	4%	7336.414
56	Aug-00	7992	7665.75	1.04259436			7422.176	569.8245	324699.9	7%	7666.295
57	Sep-00	7645	7661.458333	0.997851801			7454.613	190.3872	36247.3	2%	7355.567
58	Oct-00	7923	7650.583333	1.035607307			7487.05	435.95	190052.4	6%	7650.64
59	Nov-00	8297	7638.875	1.086154702			7519.487	777.5128	604526.2	9%	8184.164
60	Dec-00	8537	7631.625	1.118634629			7551.924	985.0756	970373.9	12%	8857.634
61	01-Jan	7005	7630.458333	0.918031355			7584.362	579.3616	335659.9	8%	6869.806
62	01-Feb	6855	7628.166667	0.898643186			7616.799	761.7989	580337.5	11%	6864.849
63	01-Mar	7420	7616.125	0.974248716			7649.236	229.2361	52549.18	3%	7509.088
64	01-Apr	7183	7599.208333	0.94523004			7681.673	498.6733	248675.1	7%	7279.019
65	01-May	7554	7599.166667	0.994056366			7714.111	160.1105	25635.38	2%	7651.421
66	01-Jun	7475	7639.916667	0.978413813			7746.548	271.5477	73738.17	4%	7562.75
67	01-Jul	7687	7677.708333	1.001210214			7778.985	91.98494	8461.23	1%	7722.852
68	01-Aug	7922	7693.708333	1.029672514			7811.422	110.5778	12227.46	1%	8068.344
69	01-Sep	7426	7721.458333	0.961735423			7843.859	417.8594	174606.5	6%	7739.642
70	01-Oct	7736	7752.791667	0.997834114			7876.297	140.2966	19683.14	2%	8048.391
71	01-Nov	8483	7782.875	1.089957117			7908.734	574.2662	329781.7	7%	8607.818
72	01-Dec	9329	7809.916667	1.194506984			7941.171	1387.829	1926069	15%	9314.18
73	02-Jan	7120	7827.041667	0.909666807			7973.608	853.6083	728674	12%	7222.38
74	02-Feb	7124	7844.333333	0.908171504			8006.045	882.0455	778004.2	12%	7215.668
75	02-Mar	7817	7873	0.992887082			8038.483	221.4827	49054.58	3%	7891.203
76	02-Apr	7538	7896.738636	0.954571292			8070.92	532.9199	284003.6	7%	7647.862
77	02-May	7921	7772.940455	1.019048074			8103.357	182.3571	33254.12	2%	8037.504
78	02-Jun	7757	7219.582727	1.074438827			8135.794	378.7943	143485.2	5%	7942.762
79	02-Jul	7816	6780.862409	1.152655743			8168.232	352.2316	124067.1	5%	8109.29

80	02-Aug	8208	6744.752611	1.216946043			8200.669	7.331226	53.74687	0%	8470.393
81	02-Sep	7828	6656.529236				8233.106	405.106	164110.9	5%	8123.716
a)	Intercept	5605.69									
	Slope	32.44									
	The trend line equation is:										
	$y = 5605.69 + 32.44 \cdot x$										
b)	SI										
	0.906										
	0.9015										
	0.9819										
	0.9478										
	0.9921										
	0.9765										
	0.993										
	1.0331										
	0.9869										
	1.0221										
	1.0886										
	1.1732										
c)	MAD	395.1825384									
	MSE	272227.0198									
	MAPE	6%									

Time	Mon/Yr	Sales	CMA	Ratio	SI	ASI	d)	Forecast, S
1	35065	4964			0.906	0.906	5480.325	5148.246264
2	35096	4968			0.901	0.901	5512.176	5151.310131
3	35125	5601			0.982	0.982	5705.536	5642.092338
4	35156	5454			0.948	0.948	5755.699	5476.292217
5	35186	5721			0.992	0.992	5767.873	5763.830048
6	35217	5690			0.976	0.976	5828.284	5704.253689
7	35247	5804	5822.416667	0.997	0.993	0.993	5846.186	5832.322095
8	35278	6040	5858.958333	1.031	1.033	1.033	5847.667	6100.813013
9	35309	5843	5889.416667	0.992	0.987	0.987	5921.679	5859.472592
10	35339	6087	5915.25	1.029	1.022	1.022	5956.845	6100.649882
11	35370	6469	5944.416667	1.088	1.089	1.088	5943.62	6532.575474
12	35400	7002	5974.083333	1.172	1.173	1.173	5969.831	7077.102235
13	35431	5416	6001.291667	0.902	Sum	Sum	5979.34	5494.216607
14	35462	5393	6034.041667	0.894	12.002		5983.729	5495.558534
15	35490	5907	6070.083333	0.973			6017.247	6017.050294
16	35521	5768	6103.041667	0.945			6087.069	5838.22712
17	35551	6107	6138.958333	0.995			6157.036	6142.682114
18	35582	6016	6184.375	0.973			6162.207	6077.147347
19	35612	6131	6229.083333	0.984			6175.563	6211.522004
20	35643	6499	6265.958333	1.037			6292.051	6495.331853
21	35674	6249	6301.791667	0.992			6333.146	6236.353798
22	35704	6472	6335.541667	1.022			6333.612	6490.951592
23	35735	6946	6365.125	1.091			6381.881	6948.294146
24	35765	7615	6395.375	1.191			6492.468	7525.097601
25	35796	5876	6428.916667	0.914			6487.186	5840.186949
26	35827	5818	6456.958333	0.901			6455.282	5839.806937
27	35855	6342	6477.583333	0.979			6460.366	6392.00825
28	35886	6143	6501.291667	0.945			6482.813	6200.162023
29	35916	6442	6532.458333	0.986			6494.781	6521.53418
30	35947	6407	6569.083333	0.975			6562.709	6450.041004
31	35977	6545	6596.125	0.992			6592.572	6590.721913
32	36008	6758	6619.208333	1.021			6542.803	6889.850693
33	36039	6485	6653.333333	0.975			6572.324	6613.235004
34	36069	6805	6690.583333	1.017			6659.492	6881.253302
35	36100	7361	6728.916667	1.094			6763.176	7364.012818
36	36130	8079	6770.125	1.193			6888.07	7973.092967
37	36161	6061	6811.708333	0.89			6691.429	6186.157292
38	36192	6187	6862.458333	0.902			6864.701	6184.05534
39	36220	6792	6927.166667	0.98			6918.764	6766.966207
40	36251	6587	6993.25	0.942			6951.374	6562.096925
41	36281	6918	7052.333333	0.981			6974.681	6900.386245
42	36312	6920	7106.5	0.974			7088.177	6822.934661
43	36342	7030	7163.291667	0.981			7081.097	6969.921821
44	36373	7491	7220.583333	1.037			7252.462	7284.369533
45	36404	7305	7278.875	1.004			7403.365	6990.11621
46	36434	7571	7340.75	1.031			7409.113	7271.555011
47	36465	8013	7403.791667	1.082			7362.224	7779.73149
48	36495	8727	7460.666667	1.17			7440.547	8421.088332
49	36526	6776	7512.333333	0.902			7480.799	6532.127635
50	36557	6847	7559.958333	0.906			7596.995	6528.303743
51	36586	7531	7595	0.992			7671.557	7141.924163

52	36617	7333	7623.833333	0.962			7738.64	6924.031828
53	36647	7685	7650.333333	1.005			7747.965	7279.238311
54	36678	7518	7654.25	0.982			7700.71	7195.828318
55	36708	7672	7655.875	1.002			7727.763	7349.12173
56	36739	7992	7665.75	1.043			7737.509	7678.888372
57	36770	7645	7661.458333	0.998			7747.943	7366.997416
58	36800	7923	7650.583333	1.036			7753.587	7661.856721
59	36831	8297	7638.875	1.086			7623.159	8195.450162
60	36861	8537	7631.625	1.119			7278.555	8869.083698
61	44197	7005	7630.458333	0.918			7733.618	6878.097978
62	44228	6855	7628.166667	0.899			7605.871	6872.552146
63	44256	7420	7616.125	0.974			7558.485	7516.88212
64	44287	7183	7599.208333	0.945			7580.343	7285.966731
65	44317	7554	7599.166667	0.994			7615.892	7658.090377
66	44348	7475	7639.916667	0.978			7656.665	7568.721975
67	44378	7687	7677.708333	1.001			7742.872	7728.321639
68	44409	7922	7693.708333	1.03			7669.738	8073.407212
69	44440	7426	7721.458333	0.962			7525.995	7743.878622
70	44470	7736	7752.791667	0.998			7570.585	8052.158431
71	44501	8483	7782.875	1.09			7794.053	8611.168834
72	44531	9329	7809.916667	1.195			7953.806	9317.079064
73	44198	7120	7827.041667	0.91			7860.579	7224.068321
74	44229	7124	7844.333333	0.908			7904.336	7216.800549
75	44257	7817	7873	0.993			7962.895	7891.840076
76	44288	7538					7954.98	7647.901634
77	44318	7921					7985.899	8036.942443
78	44349	7757					7945.518	7941.615632
79	44379	7816					7872.81	8107.521548
80	44410	8208					7946.631	8467.926052
81	44441	7828					7933.408	8120.759829
82	44471							8442.460141
	Intercept	5651.906035						
	Slope	31.83						
e)	Forecast, S		Actual Values					
	7224.068		7120					
	7216.801		7124					
	7891.84		7817					
	7647.902		7538					
	8036.942		7921					
	7941.616		7757					
	8107.522		7816					
	8467.926		8208					
	8120.76		7828					
f)	The values are close to the actual values.							
g)	Forecast, S							
	8442.46							

