

Real Estate Data from Appendix C7 of Kutner, Nachtsheim and Neter, *Applied Linear Regression Models*
Case Diagnostics

n = 68, k + 1 = 4 (Intercept, SqFt/100, Bedrooms, LotSize); Quality = 1 (High) Houses Only
Y = Sales Price; variance appeared constant for this subset of the data

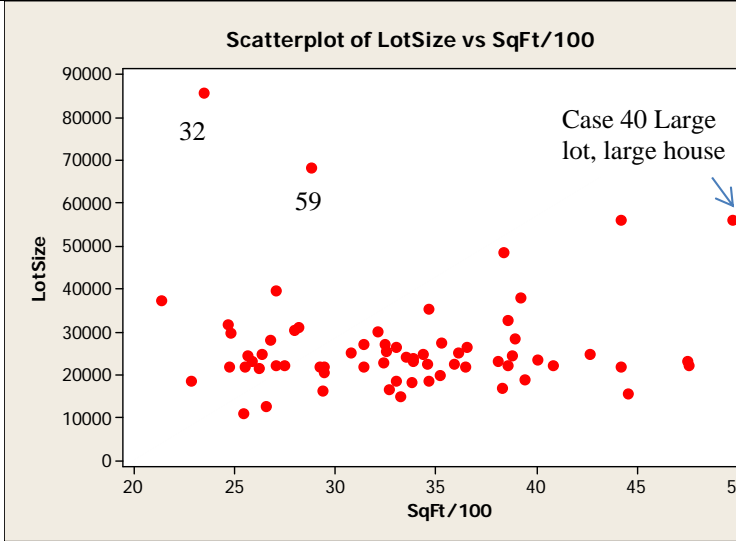
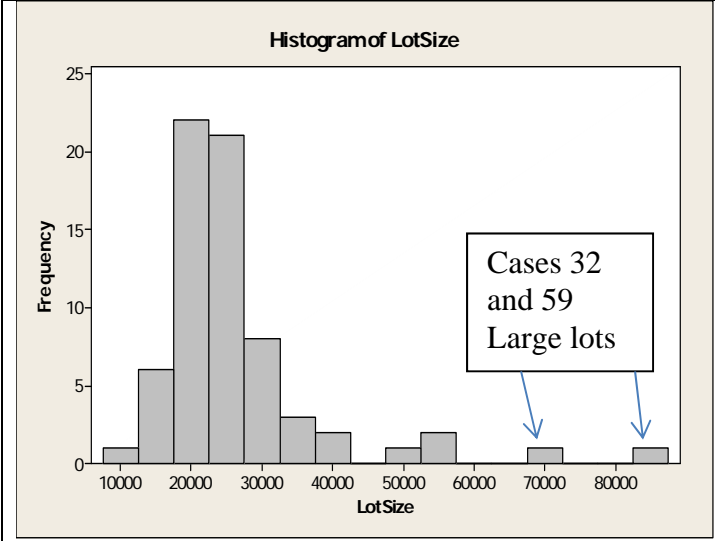
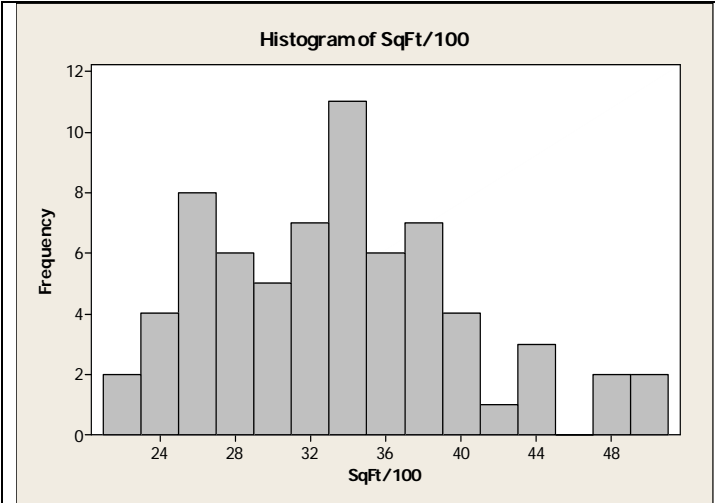
```
> Price<-lm(Salesprice~SqFt.100+Bedrooms+LotSize,data=Quality1)
> summary(Price)
Coefficients:
```

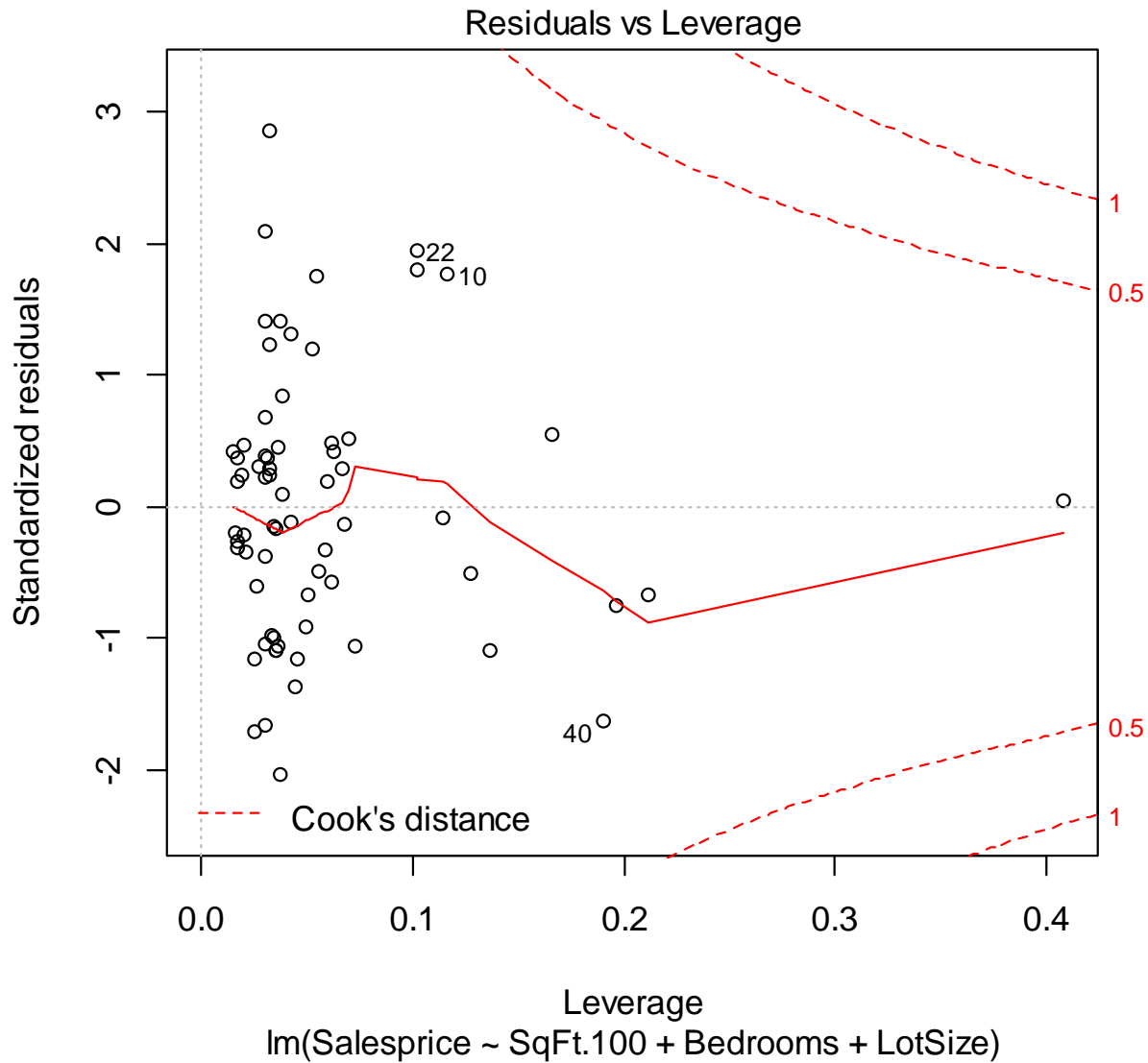
```
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 290668.159   74819.297   3.885 0.000245 ***
SqFt.100      9850.567    2474.930   3.980 0.000178 ***
Bedrooms    -35868.053   14522.725  -2.470 0.016197 *
LotSize         2.530      1.111    2.277 0.026138 *
Residual standard error: 110500 on 64 degrees of freedom
Multiple R-squared:  0.2414, Adjusted R-squared:  0.2059
F-statistic: 6.789 on 3 and 64 DF, p-value: 0.0004797
```

ID identifies the house. Y-HAT is predicted sales price, TRESID = Studentized residual. Values used to find problem cases are in parentheses. For example, hat values > .1176 might be a problem.

ID	SqFt/100	Bdrms	LotSize	Salesprice	Y-HAT	TRESID (3)	HI (.1176)	COOK (1)
1	27.91	3	30595	559000	535383	0.21532	0.029996	0.000364
2	33.81	5	23172	535000	502989	0.29219	0.031605	0.000707
3	34.59	5	35351	525000	541479	-0.15056	0.034314	0.000204
4	22.83	3	18524	420000	454809	-0.32232	0.058707	0.001643
5	25.58	2	24601	585000	533138	0.48132	0.061086	0.003814
6	40.00	6	23595	549900	529166	0.19196	0.059439	0.000591
7	39.42	4	18920	675000	583363	0.84360	0.038527	0.007161
8	38.89	4	28378	830000	602067	2.15292	0.030421	0.034403
9	38.57	4	32793	920000	610082	3.02687	0.032473	0.068179
10	47.56	4	22215	855000	671882	1.79302	0.116724	0.102660
11	33.02	4	26463	585500	539400	0.41748	0.014788	0.000663
12	26.29	3	24778	399000	504711	-0.97232	0.033321	0.008154
13	44.18	5	22024	790000	602236	1.77571	0.054019	0.043549
14	47.46	4	23368	665000	673813	-0.08408	0.114662	0.000233
15	32.42	3	27173	725000	571154	1.42443	0.029820	0.015344
16	24.64	3	31703	647000	505975	1.31121	0.042509	0.018870
17	44.19	4	56127	780000	724466	0.54710	0.165858	0.015043
18	38.77	3	24639	657500	627295	0.28076	0.066233	0.001418
19	38.08	5	23324	578000	545436	0.29659	0.027290	0.000626
20	33.76	5	18452	500000	490557	0.08642	0.038011	0.000075
21	29.40	3	20639	484530	524877	-0.36814	0.030088	0.001065
22	26.54	5	12821	609000	405193	1.98994	0.101693	0.107115
23	26.72	4	28049	635000	481353	1.42789	0.036877	0.019205
24	33.86	4	24008	519000	541464	-0.20330	0.015595	0.000166
25	36.48	4	26604	625100	573839	0.46550	0.019571	0.001095

26	34.55	4	22468	585444	544366	0.37235	0.017216	0.000615
27	33.21	3	15012	399900	548174	-1.38221	0.044687	0.022029
28	28.17	4	31214	389900	503642	-1.04551	0.029835	0.008392
29	32.10	3	30033	649000	575236	0.67485	0.030389	0.003599
30	35.88	4	22530	535000	557624	-0.20516	0.019532	0.000213
31	27.05	3	22196	640000	505667	1.24081	0.032541	0.012838
32	23.44	4	86004	600000	595640	0.05087	0.408217	0.000453
33	42.64	5	24983	582500	594551	-0.11054	0.042180	0.000137
34	26.15	3	21722	545000	495602	0.45235	0.036024	0.001936
35	36.08	6	25219	480000	494660	-0.13630	0.067676	0.000342
36	24.79	4	29805	595000	466783	1.19542	0.052064	0.019491
37	32.51	3	25570	610000	567985	0.38337	0.030016	0.001152
38	25.47	2	21789	570000	524941	0.41839	0.062913	0.002977
39	50.32	7	22000	479000	590921	-1.09131	0.136520	0.046934
40	49.73	6	56139	545000	707332	-1.65376	0.189955	0.156104
41	25.82	4	23256	335000	460364	-1.16380	0.044982	0.015861
42	31.39	6	21810	629000	439838	1.83948	0.102180	0.092816
43	35.16	4	19867	505500	543795	-0.34774	0.020955	0.000656
44	21.29	0	37414	528750	595025	-0.67243	0.211663	0.030612
45	29.36	4	16437	370000	477986	-0.99408	0.034297	0.008776
46	33.51	5	24216	529000	502675	0.24026	0.031809	0.000481
47	31.36	4	27158	490000	524806	-0.31532	0.016734	0.000429
48	35.25	4	27501	535000	563992	-0.26257	0.016570	0.000295
49	39.17	6	37972	612000	557357	0.50956	0.069627	0.004915
50	27.02	4	39643	442500	513635	-0.65743	0.050197	0.005762
51	36.44	3	21895	500000	597402	-0.90266	0.049711	0.010687
52	30.72	4	25158	539000	513443	0.23167	0.018568	0.000258
53	32.33	4	22961	545500	523745	0.19700	0.016801	0.000168
54	29.18	4	22003	424000	490292	-0.60474	0.026158	0.002480
55	32.66	4	16640	325000	511006	-1.73110	0.025491	0.019004
56	29.40	4	22003	367000	492459	-1.15261	0.025240	0.008556
57	34.30	3	25018	470000	584222	-1.05364	0.036417	0.010471
58	24.72	4	21784	393000	445805	-0.48863	0.055467	0.003547
59	28.78	4	68351	530000	603589	-0.74010	0.196481	0.033723
60	25.37	3	11053	400000	460931	-0.56612	0.061874	0.005341
61	38.58	4	22224	403500	583446	-1.67624	0.030041	0.021158
62	27.42	3	22306	550000	509590	0.36897	0.031437	0.001120
63	34.60	5	18571	380000	499133	-1.09921	0.035419	0.011056
64	38.36	5	48465	500000	611788	-1.05128	0.072964	0.021711
65	44.53	7	15595	465000	517685	-0.50741	0.127779	0.009540
66	40.80	5	22134	451500	569219	-1.08575	0.035124	0.010699
67	33.01	3	18741	336000	555637	-2.07671	0.037047	0.039439
68	38.28	4	17051	550000	567406	-0.15913	0.035578	0.000237





This is one of the 4 plots produced by the R command `> plot(Price)`. The ID numbers (10, 22, 40) are from the column labeled ID and identify a few houses to investigate.