Build these columns using a formula.

Rows	SBP	QUET	AGE	Predicted SBP	Residual SBP	Studentized Resid SBP	h SBP	$\hat{\sigma}(i)$	Ext Studentized residuals	Cook's D Influence SBP
1	135	2.876	45	130.398624	4.60137612	0.53796771	0.07972168	9.02871055	0.53125424	0.00835696
2	122	3.251	41	129.874519	-7.8745188	-1.0050287	0.22776896	8.91468036	-1.0051818	0.09930771
3	130	3.1	49	136.763417	-6.7634174	-0.7769531	0.04676726	8.97916619	-0.7714907	0.00987214
4	148	3.768	52	146.412378	1.58762153	0.18672576	0.09062787	9.06864351	0.18358358	0.00115826
5	146	2.979	54	140.809366	5.19063423	0.62247062	0.12529971	9.01327951	0.61575501	0.01850151
6	129	2.79	47	131.650376	-2.6503757	-0.3113932	0.08871783	9.05891755	-0.3064818	0.0031467
7	162	3.668	60	153.798564	8.20143561	0.95438583	0.07105943	8.93046775	0.95284379	0.02322526
8	160	3.612	48	140.710635	19.2893653	2.321383	0.13144283	8.18777799	2.527858	0.27183842
9	144	2.368	44	124.400095	19.5999053	2.45213594	0.19633511	8.07884017	2.70624716	0.48965568
10	180	4.637	64	167.427653	12.5723468	1.60848086	0.23147668	8.6598989	1.65605596	0.2597531
11	166	3.877	59	154.79131	11.20869	1.2948642	0.05742177	8.8078934	1.3107628	0.03404759
12	138	4.032	51	147.941414	-9.9414143	-1.2665103	0.22494052	8.81959059	-1.2803604	0.15517753
13	152	4.116	64	162.347522	-10.347522	-1.2298623	0.10953705	8.83430371	-1.241241	0.06202074
14	138	3.673	56	149.666688	-11.666688	-1.3343146	0.03831058	8.79116061	-1.3532685	0.02364172
15	140	3.562	54	146.494042	-6.4940425	-0.7410054	0.03385203	8.98778887	-0.7350899	0.00641302
16	134	2.998	50	136.814	-2.8140001	-0.3259577	0.0624772	9.05746279	-0.3208682	0.00236016
17	145	3.36	49	139.298608	5.70139232	0.65710764	0.05301096	9.0062964	0.65052234	0.00805698
18	142	3.024	46	132.88689	9.11311041	1.05776503	0.0662922	8.89734079	1.05998791	0.02647943
19	135	3.171	57	145.816978	-10.816978	-1.2985007	0.12706146	8.8063733	-1.3146709	0.08180754
20	142	3.401	56	147.014489	-5.0144894	-0.5772242	0.05066276	9.02182471	-0.5704559	0.00592702
21	150	3.628	56	149.227906	0.77209444	0.08822588	0.03660374	9.07288193	0.08670072	0.00009858
22	144	3.751	58	152.51756	-8.5175604	-0.9784815	0.04680594	8.92306142	-0.9777114	0.01567125
23	137	3.296	53	142.85519	-5.8551904	-0.6693976	0.03756849	9.00372641	-0.6628783	0.00583044
24	132	3.21	50	138.881155	-6.8811553	-0.7872871	0.03902395	8.97661022	-0.7819747	0.00839003
25	149	3.301	54	143.949101	5.05089856	0.57936632	0.04393606	9.02143486	0.57259765	0.00514185
26	132	3.017	48	134.908949	-2.9089492	-0.3356512	0.0551734	9.05645759	-0.3304469	0.00219297
27	120	2.789	43	127.459995	-7.4599954	-0.8833284	0.10280072	8.95120092	-0.8798584	0.02980096
28	126	2.956	43	129.088368	-3.0883676	-0.3661751	0.10517832	9.05309907	-0.3606313	0.00525347
29	161	3.8	63	158.221133	2.77886683	0.33025306	0.10936881	9.05702102	0.32511231	0.00446445
30	170	4.132	63	161.458376	8.54162383	1.01038012	0.10098398	8.91296275	1.01072879	0.03822376
31	152	3.962	62	158.755594	-6.7555944	-0.7909892	0.08242379	8.97568617	-0.7857327	0.01873399
32	164	4.01	65	162.359102	1.64089835	0.19701053	0.12734892	9.06802569	0.19370847	0.00188804

NOTE: Click on red arrow, then "Save Columns" to obtain

$\hat{Y}_i$
$\hat{e}_i$
r_i
h_{ii}
Cook's D_i

Response SBP

Summary of Fit

RSquare	0.641241
RSquare Adj	0.616499
Root Mean Square Error	8.916038
Mean of Response	144.5313
Observations (or Sum Wgts)	32

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	2	4120.5922	2060.30	25.9171
Error	29	2305.3765	79.50	Prob > F
C. Total	31	6425.9688		<.0001

Parameter Estimates

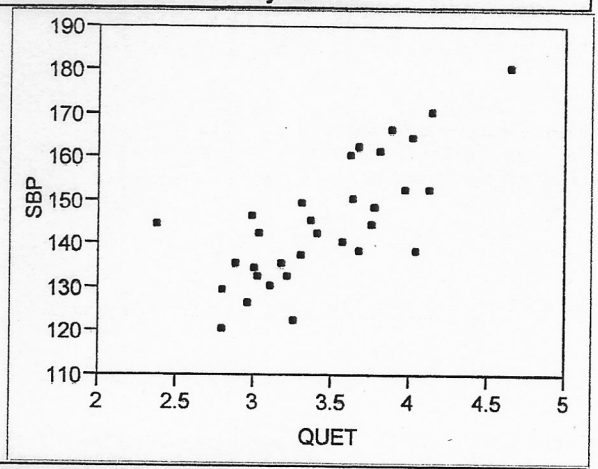
Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	55.323436	12.53475	4.41	0.0001
QUET	9.7507319	5.402456	1.80	0.0815
AGE	1.0451574	0.386057	2.71	0.0113

Effect Tests

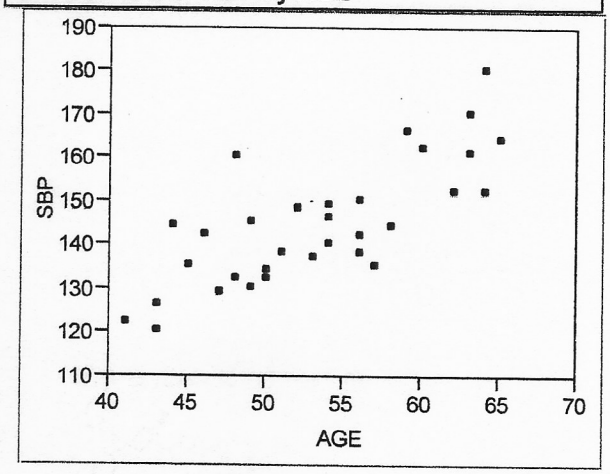
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
QUET	1	1	258.96187	3.2576	0.0815
AGE	1	1	582.64651	7.3293	0.0113

Fit Y by X Group

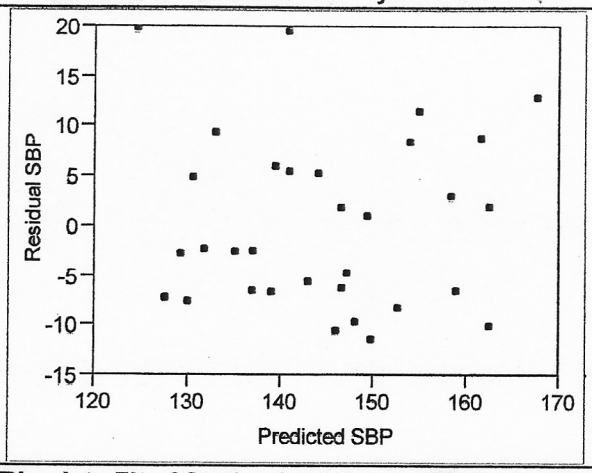
Bivariate Fit of SBP By QUET



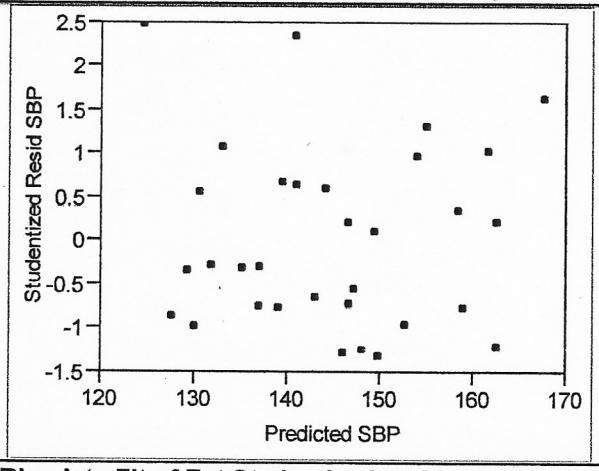
Bivariate Fit of SBP By AGE



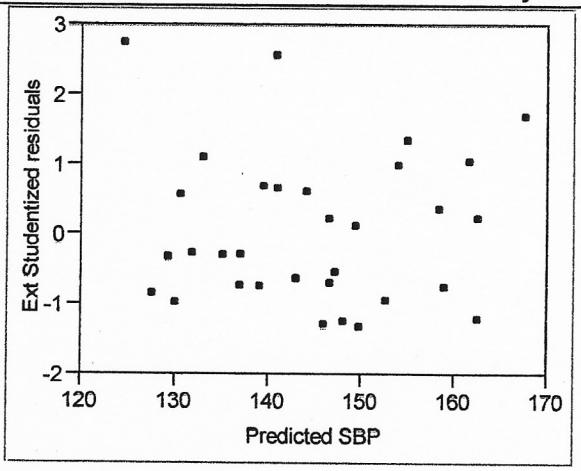
Bivariate Fit of Residual SBP By Predicted SBP



Bivariate Fit of Studentized Resid SBP By Predicted SBP

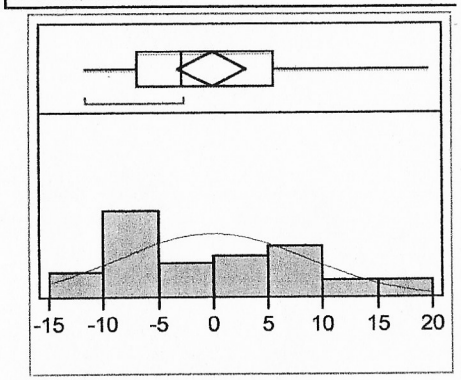


Bivariate Fit of Ext Studentized residuals By Predicted SBP



Distributions

Residual SBP



Quantiles

100.0%	maximum	19.600
99.5%		19.600
97.5%		19.600
90.0%		12.163
75.0%	quartile	5.574
50.0%	median	-2.732
25.0%	quartile	-6.852
10.0%		-10.226
2.5%		-11.667
0.5%		-11.667
0.0%	minimum	-11.667

Moments

Mean	-1.33e-14
Std Dev	8.6236294
Std Err Mean	1.5244567
upper 95% Mean	3.1091283
lower 95% Mean	-3.109128
N	32

Fitted Normal

Parameter Estimates

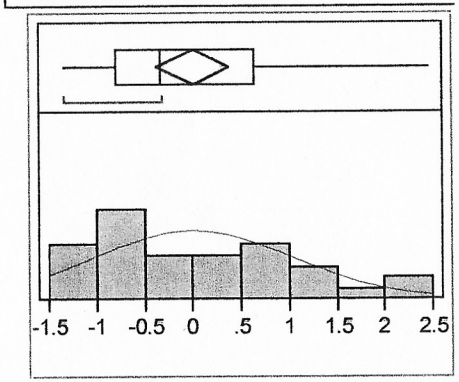
Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	Mu	-0.000000	-3.109150	3.10915
Dispersion	Sigma	8.623629	6.913593	11.46494

Goodness-of-Fit Test

Shapiro-Wilk W Test

W	Prob<W
0.927690	0.0402

Studentized Resid SBP



Quantiles

100.0%	maximum	2.4521
99.5%		2.4521
97.5%		2.4521
90.0%		1.5144
75.0%	quartile	0.6484
50.0%	median	-0.3187
25.0%	quartile	-0.7901
10.0%		-1.2555
2.5%		-1.3343
0.5%		-1.3343
0.0%	minimum	-1.3343

Moments

Mean	0.0068894
Std Dev	1.0365882
Std Err Mean	0.1832446
upper 95% Mean	0.3806167
lower 95% Mean	-0.366838
N	32

Fitted Normal

Parameter Estimates

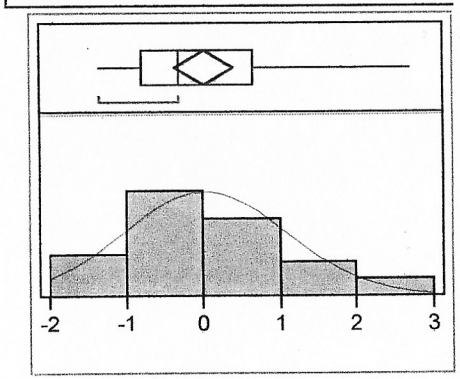
Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	Mu	0.006889	-0.36684	0.380619
Dispersion	Sigma	1.036588	0.8310362	1.378123

Goodness-of-Fit Test

Shapiro-Wilk W Test

W	Prob<W
0.926926	0.0382

Ext Studentized residuals



Quantiles

100.0%	maximum	2.7062
99.5%		2.7062
97.5%		2.7062
90.0%		1.5525
75.0%	quartile	0.6418
50.0%	median	-0.3137
25.0%	quartile	-0.7848
10.0%		-1.2686
2.5%		-1.3533
0.5%		-1.3533
0.0%	minimum	-1.3533

Moments

Mean	0.0220430
Std Dev	1.0754501
Std Err Mean	0.1901145
upper 95% Mean	0.4097814
lower 95% Mean	-0.365695
N	32

Fitted Normal

Parameter Estimates

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	Mu	0.022043	-0.365698	0.409784
Dispersion	Sigma	1.075450	0.8621920	1.429789

Goodness-of-Fit Test

Shapiro-Wilk W Test

W	Prob<W
0.921976	0.0274

The fact that an observation provides a large outlier is not, of course, good, but it does not necessarily mean that the observation is influential in fitting the chosen model. For example, in Figure 8.1, where the data of Table 8.1 are plotted, we see that the observation marked 19 will certainly be an outlier for most simple models fitted through the data. Its possible influence is moderated by the fact that there are

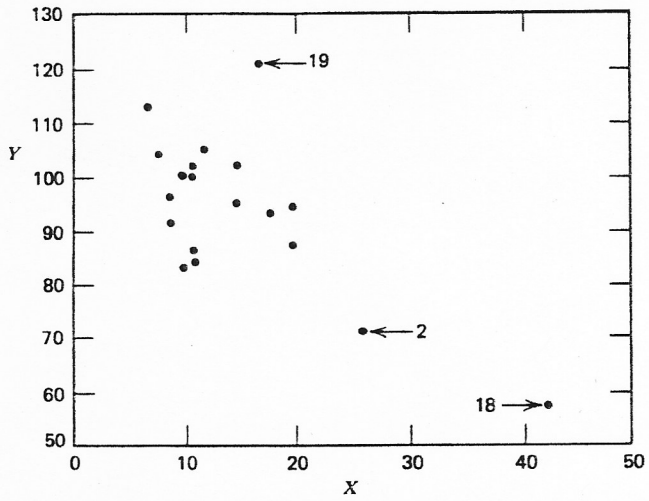


Figure 8.1. A regression with an observation (19) that may not be influential and one (18) that may well be. X represents the age of a child at first word (in months) and Y represents the child's score on an aptitude test. Reproduced by permission from Andrews and Pregibon (1978). The original data were recorded by Dr. L. M. Linde of UCLA and were given by Mickey, Dunn, and Clark (1967). See Table 8.1 for the data.

TABLE 8.1. Age at First Word (X) and Gesell Adaptive Score (Y)

Case	X	Y
1	15	95
2	26	71
3	10	83
4	9	91
5	15	102
6	20	87
7	18	93
8	11	100
9	8	104
10	20	94
11	7	113
12	9	96
13	10	83
14	11	84
15	11	102
16	10	100
17	12	105
18	42	57
19	17	121
20	11	86
21	10	100

Source: Data from Mickey, Dunn, and Clark (1967) but recorded by L. M. Linde of UCLA.

other observations at neighboring X-values. Observation 18, on the other hand, could well be an influential one. Being alone in its territory, it may have a major influence on the position of the fitted model there. It may or may not have a large residual, depending on the model fitted and the rest of the data.