

Auto_Specs_and_Linear_Regression

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Libraries

```
library(MASS)
library(ISLR)
```

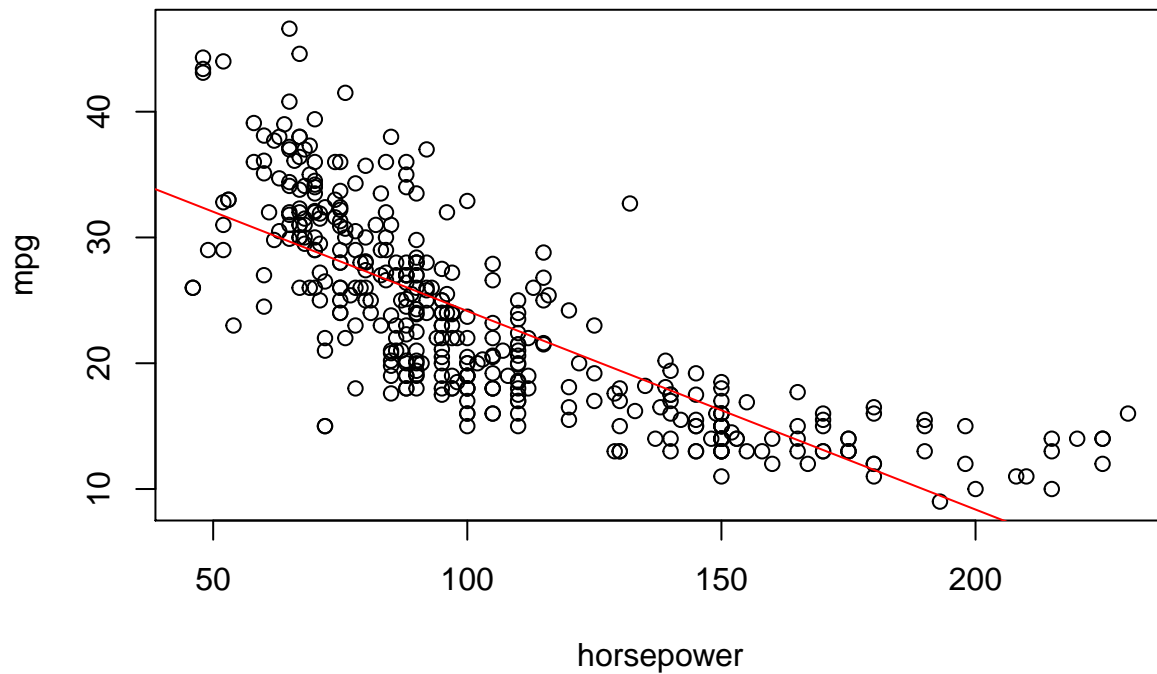
Simple Linear Regression

```
write.csv(Auto, "auto.csv")
```

```
qualitative_columns = c(2, 8, 9)
```

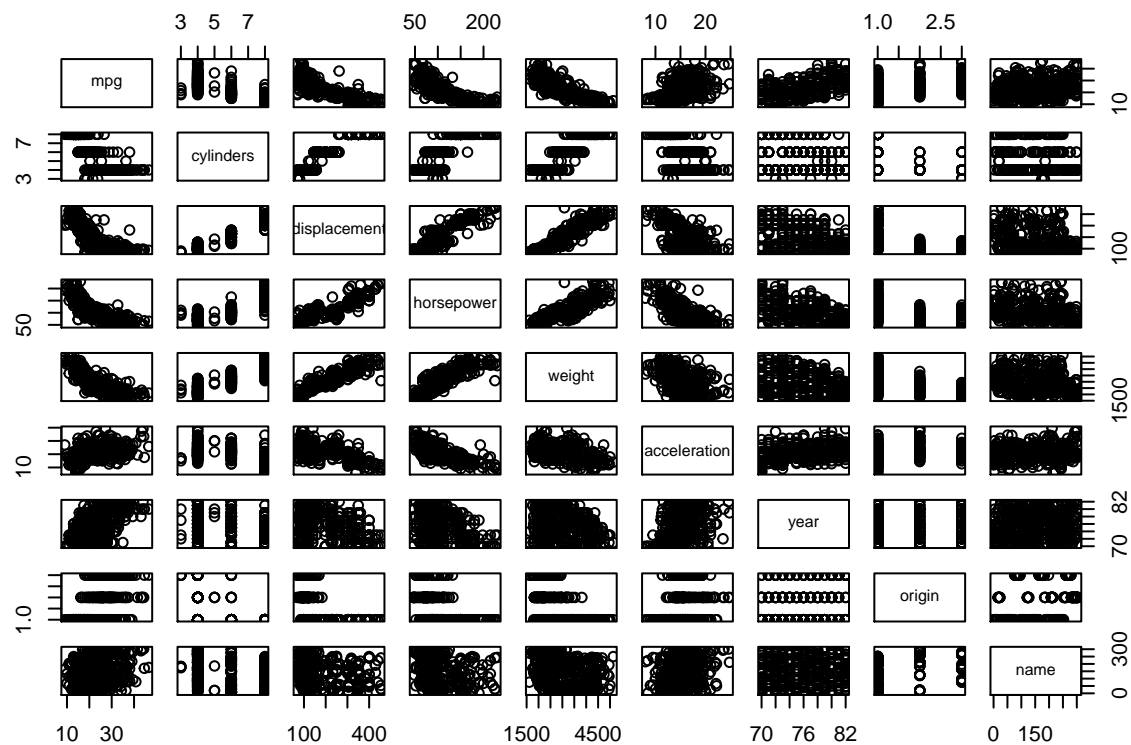
```
fit1 = lm(mpg ~ horsepower, data = Auto)
summary(fit1)
```

```
##
## Call:
## lm(formula = mpg ~ horsepower, data = Auto)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -13.5710  -3.2592  -0.3435   2.7630  16.9240
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  39.935861   0.717499   55.66  <2e-16 ***
## horsepower  -0.157845   0.006446  -24.49  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.906 on 390 degrees of freedom
## Multiple R-squared:  0.6059, Adjusted R-squared:  0.6049
## F-statistic: 599.7 on 1 and 390 DF,  p-value: < 2.2e-16
plot(mpg ~ horsepower, Auto)
abline(fit1, col='red')
```



Multiple Linear Regression

```
pairs(Auto) # almost too complicated to work with
```



```
fit = lm(mpg~., data = Auto)
summary(fit)
```

```
##
```

```
## Call:
## lm(formula = mpg ~ ., data = Auto)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -5.646  0.000  0.000  0.000  5.646
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.187305   12.773943   0.015  0.988335
## cylinders      -0.918096    0.616653  -1.489  0.140231
## displacement    0.003041    0.015621   0.195  0.846109
## horsepower     -0.042342    0.029070  -1.457  0.148919
## weight         -0.004193    0.001209  -3.467  0.000829
## acceleration   -0.481449    0.171537  -2.807  0.006206
## year           0.636498    0.112195   5.673  1.89e-07
## origin         1.324264    4.243221   0.312  0.755737
## nameamc ambassador dpl    3.371358    3.245610   1.039  0.301870
## nameamc ambassador sst    3.364264    3.270924   1.029  0.306616
## nameamc concord          -0.122500    3.275058  -0.037  0.970251
## nameamc concord d/l      -1.686548    3.422955  -0.493  0.623483
## nameamc concord dl 6     -0.529687    3.514452  -0.151  0.880556
## nameamc gremlin         -0.426606    2.958293  -0.144  0.885679
## nameamc hornet           0.269026    2.902972   0.093  0.926382
## nameamc hornet sportabout (sw) -0.403111    3.527112  -0.114  0.909278
## nameamc matador          0.462233    2.667735   0.173  0.862853
## nameamc matador (sw)     3.118929    2.894160   1.078  0.284233
## nameamc pacer            0.012163    3.519402   0.003  0.997251
## nameamc pacer d/l       -1.682001    3.517154  -0.478  0.633716
## nameamc rebel sst        2.875941    3.284138   0.876  0.383658
## nameamc spirit dl         0.713000    4.063462   0.175  0.861131
## nameaudi 100 ls          0.936254    3.449074   0.271  0.786702
## nameaudi 100ls         -3.133448    2.984726  -1.050  0.296773
## nameaudi 4000           4.004843    3.244193   1.234  0.220431
## nameaudi 5000          -4.109082    3.450859  -1.191  0.237070
## nameaudi 5000s (diesel)  11.652927    3.494256   3.335  0.001266
## nameaudi fox            3.199486    3.328970   0.961  0.339226
## namebmw 2002            2.082893    3.429803   0.607  0.545276
## namebmw 320i           -5.320674    3.378167  -1.575  0.118967
## namebuick century       2.213275    3.073805   0.720  0.473473
## namebuick century 350    2.163058    3.250910   0.665  0.507615
## namebuick century limited 1.154506    3.653147   0.316  0.752754
## namebuick century luxus (sw) 3.701574    3.397404   1.090  0.278999
## namebuick century special 0.471663    3.468124   0.136  0.892143
## namebuick electra 225 custom 5.565899    3.481596   1.599  0.113606
## namebuick estate wagon (sw) 2.288361    2.883255   0.794  0.429596
## namebuick lesabre custom  3.878880    3.350669   1.158  0.250252
## namebuick opel isuzu deluxe 2.360903    4.090583   0.577  0.565360
## namebuick regal sport coupe (turbo) -0.770758    3.673221  -0.210  0.834301
## namebuick skyhawk        1.178015    3.453774   0.341  0.733885
## namebuick skylark        0.485925    3.292621   0.148  0.883024
## namebuick skylark 320     3.220548    3.239745   0.994  0.323008
## namebuick skylark limited 2.526638    3.945353   0.640  0.523630
## namecadillac eldorado    7.506805    3.434596   2.186  0.031592
```

## namecadillac seville	4.705913	3.307504	1.423	0.158454
## namecapri ii	0.213795	3.974233	0.054	0.957225
## namechevroelt chevelle malibu	1.190886	3.501889	0.340	0.734643
## namechevrolet bel air	3.526745	3.332996	1.058	0.292994
## namechevrolet camaro	1.016970	3.965053	0.256	0.798197
## namechevrolet caprice classic	1.486191	2.705678	0.549	0.584249
## namechevrolet cavalier	1.711757	4.062490	0.421	0.674558
## namechevrolet cavalier 2-door	6.060983	4.085007	1.484	0.141584
## namechevrolet cavalier wagon	0.377051	4.065117	0.093	0.926318
## namechevrolet chevelle concours (sw)	1.497987	3.363217	0.445	0.657161
## namechevrolet chevelle malibu	2.508523	3.012061	0.833	0.407277
## namechevrolet chevelle malibu classic	2.148872	2.973671	0.723	0.471889
## namechevrolet chevette	2.796588	3.583400	0.780	0.437307
## namechevrolet citation	0.835024	3.277093	0.255	0.799488
## namechevrolet concours	-0.962069	3.436400	-0.280	0.780185
## namechevrolet impala	3.901975	2.655000	1.470	0.145343
## namechevrolet malibu	0.338930	2.908792	0.117	0.907516
## namechevrolet malibu classic (sw)	1.566909	3.369001	0.465	0.643052
## namechevrolet monte carlo	1.755561	3.510683	0.500	0.618323
## namechevrolet monte carlo landau	1.360482	2.830125	0.481	0.631955
## namechevrolet monte carlo s	2.817323	3.294556	0.855	0.394875
## namechevrolet monza 2+2	1.960822	3.418832	0.574	0.567797
## namechevrolet nova	0.013367	2.932203	0.005	0.996373
## namechevrolet nova custom	-0.583803	3.483183	-0.168	0.867291
## namechevrolet vega	-0.123809	3.451390	-0.036	0.971468
## namechevrolet vega (sw)	0.835785	3.957409	0.211	0.833241
## namechevrolet vega 2300	5.309133	3.978383	1.334	0.185606
## namechevrolet woody	0.242401	4.035002	0.060	0.952237
## namechevy c10	-1.686820	3.292205	-0.512	0.609722
## namechevy c20	4.381943	3.755983	1.167	0.246612
## namechevy s-10	4.822281	4.016031	1.201	0.233181
## namechrysler cordoba	3.158331	3.288955	0.960	0.339636
## namechrysler lebaron medallion	-2.791925	4.039754	-0.691	0.491378
## namechrysler lebaron salon	-4.524894	3.582800	-1.263	0.210061
## namechrysler lebaron town @ country (sw)	2.084281	3.302393	0.631	0.529641
## namechrysler new yorker brougham	5.282481	3.390324	1.558	0.122924
## namechrysler newport royal	4.391942	3.291715	1.334	0.185688
## namedatsun 1200	7.452422	6.449055	1.156	0.251090
## namedatsun 200-sx	-5.232326	6.424023	-0.814	0.417638
## namedatsun 200sx	2.817519	6.441163	0.437	0.662913
## namedatsun 210	5.606103	6.195917	0.905	0.368126
## namedatsun 210 mpg	5.070308	6.390048	0.793	0.429714
## namedatsun 280-zx	5.896050	6.830585	0.863	0.390466
## namedatsun 310	4.643895	6.277737	0.740	0.461496
## namedatsun 310 gx	4.043465	6.266014	0.645	0.520470
## namedatsun 510	-2.468844	6.400190	-0.386	0.700649
## namedatsun 510 (sw)	3.062356	6.557580	0.467	0.641698
## namedatsun 510 hatchback	6.552699	6.395446	1.025	0.308465
## namedatsun 610	-3.382103	6.545652	-0.517	0.606711
## namedatsun 710	1.331250	6.306882	0.211	0.833331
## namedatsun 810	-3.215340	6.816828	-0.472	0.638366
## namedatsun 810 maxima	-2.442319	6.860787	-0.356	0.722736
## namedatsun b-210	2.371920	6.357360	0.373	0.710004
## namedatsun b210	3.331328	6.462449	0.515	0.607549

## namedatsun b210 gx	9.604655	6.404554	1.500	0.137408
## namedatsun f-10 hatchback	2.950464	6.329051	0.466	0.642281
## namedatsun pl510	0.981674	6.254240	0.157	0.875648
## namedodge aries se	0.403815	4.041675	0.100	0.920649
## namedodge aries wagon (sw)	-2.256829	4.019898	-0.561	0.575992
## namedodge aspen	-0.206883	3.088343	-0.067	0.946748
## namedodge aspen 6	0.366429	3.465245	0.106	0.916035
## namedodge aspen se	3.002155	3.493627	0.859	0.392579
## namedodge challenger se	2.064684	3.290611	0.627	0.532048
## namedodge charger 2.2	5.309608	4.166685	1.274	0.206030
## namedodge colt	1.482396	3.584355	0.414	0.680228
## namedodge colt (sw)	3.716950	4.113570	0.904	0.368771
## namedodge colt hardtop	1.522048	4.067987	0.374	0.709223
## namedodge colt hatchback custom	5.628627	4.197231	1.341	0.183482
## namedodge colt m/m	6.221646	4.105872	1.515	0.133405
## namedodge coronet brougham	2.669663	3.290052	0.811	0.419382
## namedodge coronet custom	1.606868	3.247032	0.495	0.621967
## namedodge coronet custom (sw)	3.302820	3.364562	0.982	0.329059
## namedodge d100	-1.672691	3.254823	-0.514	0.608647
## namedodge d200	5.074896	3.746461	1.355	0.179140
## namedodge dart custom	-0.700127	3.265096	-0.214	0.830727
## namedodge diplomat	2.561880	3.282848	0.780	0.437333
## namedodge magnum xe	2.349068	3.293521	0.713	0.477652
## namedodge monaco (sw)	5.409949	3.475789	1.556	0.123313
## namedodge monaco brougham	1.448836	3.286662	0.441	0.660460
## namedodge omni	2.600955	4.128988	0.630	0.530433
## namedodge rampage	0.321131	4.244538	0.076	0.939869
## namedodge st. regis	1.874870	3.310142	0.566	0.572613
## namefiat 124 sport coupe	0.843793	3.356728	0.251	0.802132
## namefiat 124 tc	-1.284412	3.299112	-0.389	0.698013
## namefiat 124b	4.234430	3.350724	1.264	0.209780
## namefiat 128	-0.302820	2.911282	-0.104	0.917402
## namefiat 131	1.571897	3.313206	0.474	0.636407
## namefiat strada custom	6.505740	3.221602	2.019	0.046595
## namefiat x1.9	3.420877	3.286517	1.041	0.300882
## nameford country	3.810815	3.447980	1.105	0.272178
## nameford country squire (sw)	2.588023	2.891203	0.895	0.373242
## nameford escort 2h	2.903207	4.052921	0.716	0.475754
## nameford escort 4w	3.832150	4.172436	0.918	0.360985
## nameford f108	-1.507274	3.300893	-0.457	0.649105
## nameford f250	5.376492	3.649336	1.473	0.144369
## nameford fairmont	1.688480	3.942005	0.428	0.669494
## nameford fairmont (auto)	-2.420856	3.577091	-0.677	0.500392
## nameford fairmont (man)	-0.267333	3.979340	-0.067	0.946596
## nameford fairmont 4	-2.076328	3.945762	-0.526	0.600108
## nameford fairmont futura	-2.654573	4.013149	-0.661	0.510101
## nameford fiesta	5.590179	4.227911	1.322	0.189646
## nameford futura	-1.916806	3.362257	-0.570	0.570117
## nameford galaxie 500	4.442480	2.696732	1.647	0.103177
## nameford gran torino	2.395149	2.717190	0.881	0.380544
## nameford gran torino (sw)	4.305909	3.032697	1.420	0.159315
## nameford granada	0.802555	3.476415	0.231	0.817981
## nameford granada ghia	1.260545	3.617154	0.348	0.728333
## nameford granada gl	-3.179138	3.572976	-0.890	0.376099

## nameford granada l	-3.195561	3.585987	-0.891	0.375378
## nameford ltd	2.931338	2.921112	1.004	0.318467
## nameford ltd landau	-0.237362	3.326697	-0.071	0.943286
## nameford maverick	0.203527	3.006394	0.068	0.946185
## nameford mustang	-0.086763	3.673287	-0.024	0.981211
## nameford mustang gl	-0.608234	4.034452	-0.151	0.880522
## nameford mustang ii	-5.296511	3.364527	-1.574	0.119151
## nameford mustang ii 2+2	1.150829	3.960070	0.291	0.772059
## nameford pinto	-0.775120	3.301082	-0.235	0.814923
## nameford pinto (sw)	-0.652033	4.001814	-0.163	0.870957
## nameford pinto runabout	-2.119866	3.996017	-0.530	0.597152
## nameford ranger	0.908753	4.018900	0.226	0.821651
## nameford thunderbird	3.220573	3.297455	0.977	0.331497
## nameford torino	2.803510	3.333644	0.841	0.402722
## nameford torino 500	2.078087	3.646390	0.570	0.570247
## namehi 1200d	6.272325	3.984511	1.574	0.119162
## namehonda accord	1.948521	6.116848	0.319	0.750849
## namehonda accord cvcc	2.063973	6.429582	0.321	0.748989
## namehonda accord lx	-1.109939	6.347929	-0.175	0.861613
## namehonda civic	1.053256	6.055926	0.174	0.862341
## namehonda civic (auto)	-2.323039	6.246699	-0.372	0.710906
## namehonda civic 1300	0.480561	6.224808	0.077	0.938645
## namehonda civic 1500 gl	10.153049	6.196347	1.639	0.105003
## namehonda civic cvcc	3.182648	6.123490	0.520	0.604593
## namehonda prelude	0.704854	6.280545	0.112	0.910907
## namemaxda glc deluxe	1.418177	6.244770	0.227	0.820893
## namemaxda rx3	-10.867477	6.267079	-1.734	0.086533
## namemazda 626	1.984386	6.282271	0.316	0.752875
## namemazda glc	15.147599	6.344260	2.388	0.019175
## namemazda glc 4	0.684088	6.266174	0.109	0.913324
## namemazda glc custom	-2.344981	6.320355	-0.371	0.711545
## namemazda glc custom l	4.174484	6.349602	0.657	0.512674
## namemazda glc deluxe	2.292567	6.386457	0.359	0.720505
## namemazda rx-4	-6.598216	6.446482	-1.024	0.308958
## namemazda rx-7 gs	-8.439964	6.251072	-1.350	0.180548
## namemazda rx2 coupe	-8.070898	6.367885	-1.267	0.208460
## namemercedes-benz 240d	6.431350	3.628762	1.772	0.079923
## namemercedes-benz 280s	-0.574813	3.970931	-0.145	0.885247
## namemercedes benz 300d	4.052324	3.714017	1.091	0.278317
## namemercury capri 2000	-0.712146	4.074233	-0.175	0.861658
## namemercury capri v6	-0.303572	3.691241	-0.082	0.934648
## namemercury cougar brougham	1.589959	3.361893	0.473	0.637471
## namemercury grand marquis	-0.237277	3.337834	-0.071	0.943496
## namemercury lynx l	5.872369	4.147537	1.416	0.160468
## namemercury marquis	3.228385	3.350958	0.963	0.338069
## namemercury marquis brougham	4.746644	3.423970	1.386	0.169282
## namemercury monarch	-1.952366	3.676929	-0.531	0.596819
## namemercury monarch ghia	2.483829	3.298276	0.753	0.453489
## namemercury zephyr	-0.947324	3.554276	-0.267	0.790476
## namemercury zephyr 6	-2.197060	3.553076	-0.618	0.537995
## namenissan stanza xe	2.717783	6.321214	0.430	0.668323
## nameoldsmobile cutlass ciera (diesel)	13.431975	3.705632	3.625	0.000492
## nameoldsmobile cutlass ls	9.023570	3.661744	2.464	0.015743
## nameoldsmobile cutlass salon brougham	4.510530	3.094646	1.458	0.148656

## nameoldsmobile cutlass supreme	3.859509	3.468811	1.113	0.269004
## nameoldsmobile delta 88 royale	2.897729	3.327483	0.871	0.386290
## nameoldsmobile omega	-2.416124	3.226729	-0.749	0.456054
## nameoldsmobile omega brougham	2.387769	3.687973	0.647	0.519087
## nameoldsmobile starfire sx	-0.102617	3.905251	-0.026	0.979098
## nameoldsmobile vista cruiser	2.806911	3.342458	0.840	0.403391
## nameopel 1900	0.364179	2.888955	0.126	0.899983
## nameopel manta	-1.463586	2.886584	-0.507	0.613446
## namepeugeot 304	6.452724	3.479899	1.854	0.067166
## namepeugeot 504	2.256143	3.020582	0.747	0.457171
## namepeugeot 504 (sw)	1.205706	3.655813	0.330	0.742359
## namepeugeot 505s turbo diesel	3.702626	3.568596	1.038	0.302418
## namepeugeot 604sl	-3.734443	3.870878	-0.965	0.337405
## nameplymouth 'cuda 340	0.001994	3.312175	0.001	0.999521
## nameplymouth arrow gs	-0.550125	4.028316	-0.137	0.891698
## nameplymouth champ	7.809841	4.225532	1.848	0.068044
## nameplymouth cricket	3.723019	4.089471	0.910	0.365191
## nameplymouth custom suburb	4.243663	3.356462	1.264	0.209569
## nameplymouth duster	3.100163	3.013252	1.029	0.306472
## nameplymouth fury	2.614640	3.537123	0.739	0.461822
## nameplymouth fury gran sedan	3.498384	3.316570	1.055	0.294497
## nameplymouth fury iii	4.299562	2.679985	1.604	0.112352
## nameplymouth grand fury	5.319669	3.369828	1.579	0.118138
## nameplymouth horizon	4.301083	4.214230	1.021	0.310336
## nameplymouth horizon 4	4.113045	4.189513	0.982	0.329010
## nameplymouth horizon miser	6.302919	4.228303	1.491	0.139755
## nameplymouth horizon tc3	5.209914	4.143729	1.257	0.212088
## nameplymouth reliant	-0.545007	3.754920	-0.145	0.884940
## nameplymouth sapporo	-0.765473	3.911418	-0.196	0.845310
## nameplymouth satellite	4.364495	3.282401	1.330	0.187186
## nameplymouth satellite custom	0.448326	3.526696	0.127	0.899143
## nameplymouth satellite custom (sw)	3.223333	3.292706	0.979	0.330392
## nameplymouth satellite sebring	1.749802	3.497976	0.500	0.618204
## nameplymouth valiant	1.232906	3.073459	0.401	0.689319
## nameplymouth valiant custom	-0.014077	3.503255	-0.004	0.996803
## nameplymouth volare	1.061859	3.474219	0.306	0.760626
## nameplymouth volare custom	1.277611	3.488038	0.366	0.715064
## nameplymouth volare premier v8	-1.282210	3.255780	-0.394	0.694696
## namepontiac astro	0.074570	3.909875	0.019	0.984828
## namepontiac catalina	5.445037	2.738420	1.988	0.049987
## namepontiac catalina brougham	5.087948	3.326698	1.529	0.129871
## namepontiac firebird	2.261616	3.549778	0.637	0.525762
## namepontiac grand prix	6.401045	3.428059	1.867	0.065314
## namepontiac grand prix lj	2.265087	3.274738	0.692	0.491020
## namepontiac j2000 se hatchback	2.822025	4.099435	0.688	0.493079
## namepontiac lemans v6	0.400000	3.461834	0.116	0.908285
## namepontiac phoenix	3.126592	3.641875	0.859	0.393024
## namepontiac phoenix lj	1.358450	3.465997	0.392	0.696086
## namepontiac safari (sw)	7.162903	3.555491	2.015	0.047108
## namepontiac sunbird coupe	0.108434	3.930485	0.028	0.978055
## namepontiac ventura sj	1.102220	3.450690	0.319	0.750192
## namerenault 12 (sw)	1.482167	3.395489	0.437	0.663573
## namerenault 12tl	-0.731646	3.266427	-0.224	0.823303
## namerenault 5 gtl	6.648358	3.298178	2.016	0.046983

## namesaab 99e	3.370839	3.531246	0.955	0.342500
## namesaab 99gle	-3.431693	3.516847	-0.976	0.331939
## namesaab 99le	0.426670	3.063299	0.139	0.889555
## namesubaru	-0.233280	6.193441	-0.038	0.970043
## namesubaru dl	0.927894	6.146221	0.151	0.880357
## nametoyota carina	-4.818346	6.613451	-0.729	0.468269
## nametoyota celica gt	0.811953	6.436095	0.126	0.899906
## nametoyota celica gt liftback	-7.749581	6.454951	-1.201	0.233256
## nametoyota corolla	0.502682	6.023789	0.083	0.933690
## nametoyota corolla 1200	4.597137	6.314043	0.728	0.468565
## nametoyota corolla 1600 (sw)	0.864045	6.491090	0.133	0.894419
## nametoyota corolla liftback	-2.358642	6.455302	-0.365	0.715735
## nametoyota corolla tercel	6.264712	6.367373	0.984	0.327968
## nametoyota corona	-1.217090	6.101896	-0.199	0.842379
## nametoyota corona hardtop	-1.623374	6.517263	-0.249	0.803893
## nametoyota corona liftback	0.624486	6.480690	0.096	0.923461
## nametoyota corona mark ii	-0.196994	6.567408	-0.030	0.976141
## nametoyota cressida	-2.182111	6.794927	-0.321	0.748894
## nametoyota mark ii	-3.168040	6.744488	-0.470	0.639756
## nametoyota starlet	4.766154	6.246630	0.763	0.447578
## nametoyota tercel	4.934523	6.305873	0.783	0.436079
## nametoyouta corona mark ii (sw)	-2.085503	6.540427	-0.319	0.750612
## nametriumph tr7 coupe	6.023330	3.279325	1.837	0.069741
## namevolkswagen rabbit	-2.827106	3.226492	-0.876	0.383382
## namevolkswagen 1131 deluxe sedan	1.497675	3.578202	0.419	0.676597
## namevolkswagen 411 (sw)	-0.947433	3.453190	-0.274	0.784470
## namevolkswagen dasher	-0.858245	2.683260	-0.320	0.749866
## namevolkswagen jetta	1.112715	3.228297	0.345	0.731190
## namevolkswagen model 111	1.727602	3.449948	0.501	0.617833
## namevolkswagen rabbit	-1.074894	2.814449	-0.382	0.703474
## namevolkswagen rabbit custom	-1.051324	3.224945	-0.326	0.745228
## namevolkswagen rabbit custom diesel	14.722011	3.409156	4.318	4.24e-05
## namevolkswagen rabbit l	3.125355	3.244626	0.963	0.338159
## namevolkswagen scirocco	0.942324	3.219495	0.293	0.770470
## namevolkswagen super beetle	0.311060	3.498963	0.089	0.929370
## namevolkswagen type 3	0.764483	3.649570	0.209	0.834581
## namevolvo 144ea	-2.766457	3.580135	-0.773	0.441829
## namevolvo 145e (sw)	-3.338886	3.609192	-0.925	0.357530
## namevolvo 244dl	-1.790859	3.478340	-0.515	0.607987
## namevolvo 245	-2.848126	3.553844	-0.801	0.425122
## namevolvo 264gl	-5.464384	3.628736	-1.506	0.135809
## namevolvo diesel	7.278640	3.656834	1.990	0.049758
## namevw dasher (diesel)	16.275630	3.503824	4.645	1.23e-05
## namevw pickup	15.324526	3.586036	4.273	5.00e-05
## namevw rabbit	4.756880	2.789326	1.705	0.091774
## namevw rabbit c (diesel)	15.164570	3.399743	4.461	2.49e-05
## namevw rabbit custom	NA	NA	NA	NA
##				
## (Intercept)				
## cylinders				
## displacement				
## horsepower				
## weight	***			
## acceleration	**			


```

## year                                     ***
## origin
## nameamc ambassador dpl
## nameamc ambassador sst
## nameamc concord
## nameamc concord d/l
## nameamc concord dl 6
## nameamc gremlin
## nameamc hornet
## nameamc hornet sportabout (sw)
## nameamc matador
## nameamc matador (sw)
## nameamc pacer
## nameamc pacer d/l
## nameamc rebel sst
## nameamc spirit dl
## nameaudi 100 ls
## nameaudi 100ls
## nameaudi 4000
## nameaudi 5000
## nameaudi 5000s (diesel)                **
## nameaudi fox
## namebmw 2002
## namebmw 320i
## namebuick century
## namebuick century 350
## namebuick century limited
## namebuick century luxus (sw)
## namebuick century special
## namebuick electra 225 custom
## namebuick estate wagon (sw)
## namebuick lesabre custom
## namebuick opel isuzu deluxe
## namebuick regal sport coupe (turbo)
## namebuick skyhawk
## namebuick skylark
## namebuick skylark 320
## namebuick skylark limited
## namecadillac eldorado                  *
## namecadillac seville
## namecapri ii
## namechevroelt chevelle malibu
## namechevrolet bel air
## namechevrolet camaro
## namechevrolet caprice classic
## namechevrolet cavalier
## namechevrolet cavalier 2-door
## namechevrolet cavalier wagon
## namechevrolet chevelle concours (sw)
## namechevrolet chevelle malibu
## namechevrolet chevelle malibu classic
## namechevrolet chevette
## namechevrolet citation
## namechevrolet concours

```

```

## namechevrolet impala
## namechevrolet malibu
## namechevrolet malibu classic (sw)
## namechevrolet monte carlo
## namechevrolet monte carlo landau
## namechevrolet monte carlo s
## namechevrolet monza 2+2
## namechevrolet nova
## namechevrolet nova custom
## namechevrolet vega
## namechevrolet vega (sw)
## namechevrolet vega 2300
## namechevrolet woody
## namechevy c10
## namechevy c20
## namechevy s-10
## namechrysler cordoba
## namechrysler lebaron medallion
## namechrysler lebaron salon
## namechrysler lebaron town @ country (sw)
## namechrysler new yorker brougham
## namechrysler newport royal
## namedatsun 1200
## namedatsun 200-sx
## namedatsun 200sx
## namedatsun 210
## namedatsun 210 mpg
## namedatsun 280-zx
## namedatsun 310
## namedatsun 310 gx
## namedatsun 510
## namedatsun 510 (sw)
## namedatsun 510 hatchback
## namedatsun 610
## namedatsun 710
## namedatsun 810
## namedatsun 810 maxima
## namedatsun b-210
## namedatsun b210
## namedatsun b210 gx
## namedatsun f-10 hatchback
## namedatsun pl510
## namedodge aries se
## namedodge aries wagon (sw)
## namedodge aspen
## namedodge aspen 6
## namedodge aspen se
## namedodge challenger se
## namedodge charger 2.2
## namedodge colt
## namedodge colt (sw)
## namedodge colt hardtop
## namedodge colt hatchback custom
## namedodge colt m/m

```

```

## namedodge coronet brougham
## namedodge coronet custom
## namedodge coronet custom (sw)
## namedodge d100
## namedodge d200
## namedodge dart custom
## namedodge diplomat
## namedodge magnum xe
## namedodge monaco (sw)
## namedodge monaco brougham
## namedodge omni
## namedodge rampage
## namedodge st. regis
## namefiat 124 sport coupe
## namefiat 124 tc
## namefiat 124b
## namefiat 128
## namefiat 131
## namefiat strada custom          *
## namefiat x1.9
## nameford country
## nameford country squire (sw)
## nameford escort 2h
## nameford escort 4w
## nameford f108
## nameford f250
## nameford fairmont
## nameford fairmont (auto)
## nameford fairmont (man)
## nameford fairmont 4
## nameford fairmont futura
## nameford fiesta
## nameford futura
## nameford galaxie 500
## nameford gran torino
## nameford gran torino (sw)
## nameford granada
## nameford granada ghia
## nameford granada gl
## nameford granada l
## nameford ltd
## nameford ltd landau
## nameford maverick
## nameford mustang
## nameford mustang gl
## nameford mustang ii
## nameford mustang ii 2+2
## nameford pinto
## nameford pinto (sw)
## nameford pinto runabout
## nameford ranger
## nameford thunderbird
## nameford torino
## nameford torino 500

```

```

## namehi 1200d
## namehonda accord
## namehonda accord cvcc
## namehonda accord lx
## namehonda civic
## namehonda civic (auto)
## namehonda civic 1300
## namehonda civic 1500 gl
## namehonda civic cvcc
## namehonda prelude
## namemaxda glc deluxe
## namemaxda rx3 .
## namemazda 626
## namemazda glc *
## namemazda glc 4
## namemazda glc custom
## namemazda glc custom l
## namemazda glc deluxe
## namemazda rx-4
## namemazda rx-7 gs
## namemazda rx2 coupe
## namemercedes-benz 240d .
## namemercedes-benz 280s
## namemercedes benz 300d
## namemercury capri 2000
## namemercury capri v6
## namemercury cougar brougham
## namemercury grand marquis
## namemercury lynx l
## namemercury marquis
## namemercury marquis brougham
## namemercury monarch
## namemercury monarch ghia
## namemercury zephyr
## namemercury zephyr 6
## namenissan stanza xe
## nameoldsmobile cutlass ciera (diesel) ***
## nameoldsmobile cutlass ls *
## nameoldsmobile cutlass salon brougham
## nameoldsmobile cutlass supreme
## nameoldsmobile delta 88 royale
## nameoldsmobile omega
## nameoldsmobile omega brougham
## nameoldsmobile starfire sx
## nameoldsmobile vista cruiser
## nameopel 1900
## nameopel manta
## namepeugeot 304 .
## namepeugeot 504
## namepeugeot 504 (sw)
## namepeugeot 505s turbo diesel
## namepeugeot 604sl
## nameplymouth 'cuda 340
## nameplymouth arrow gs

```

```

## nameplymouth champ .
## nameplymouth cricket
## nameplymouth custom suburb
## nameplymouth duster
## nameplymouth fury
## nameplymouth fury gran sedan
## nameplymouth fury iii
## nameplymouth grand fury
## nameplymouth horizon
## nameplymouth horizon 4
## nameplymouth horizon miser
## nameplymouth horizon tc3
## nameplymouth reliant
## nameplymouth sapporo
## nameplymouth satellite
## nameplymouth satellite custom
## nameplymouth satellite custom (sw)
## nameplymouth satellite sebring
## nameplymouth valiant
## nameplymouth valiant custom
## nameplymouth volare
## nameplymouth volare custom
## nameplymouth volare premier v8
## namepontiac astro
## namepontiac catalina *
## namepontiac catalina brougham
## namepontiac firebird
## namepontiac grand prix .
## namepontiac grand prix lj
## namepontiac j2000 se hatchback
## namepontiac lemans v6
## namepontiac phoenix
## namepontiac phoenix lj
## namepontiac safari (sw) *
## namepontiac sunbird coupe
## namepontiac ventura sj
## namerenault 12 (sw)
## namerenault 12tl
## namerenault 5 gtl *
## namesaab 99e
## namesaab 99gle
## namesaab 99le
## namesubaru
## namesubaru dl
## nametoyota carina
## nametoyota celica gt
## nametoyota celica gt liftback
## nametoyota corolla
## nametoyota corolla 1200
## nametoyota corolla 1600 (sw)
## nametoyota corolla liftback
## nametoyota corolla tercel
## nametoyota corona
## nametoyota corona hardtop

```

```

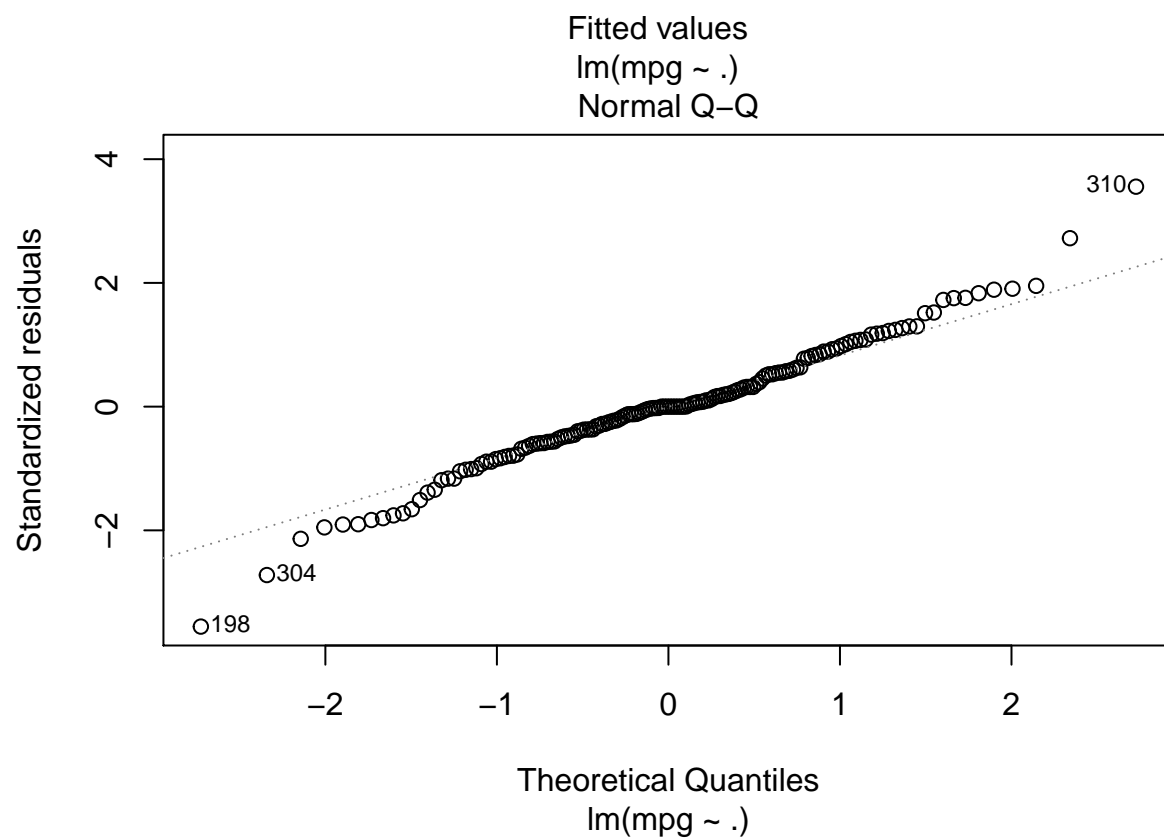
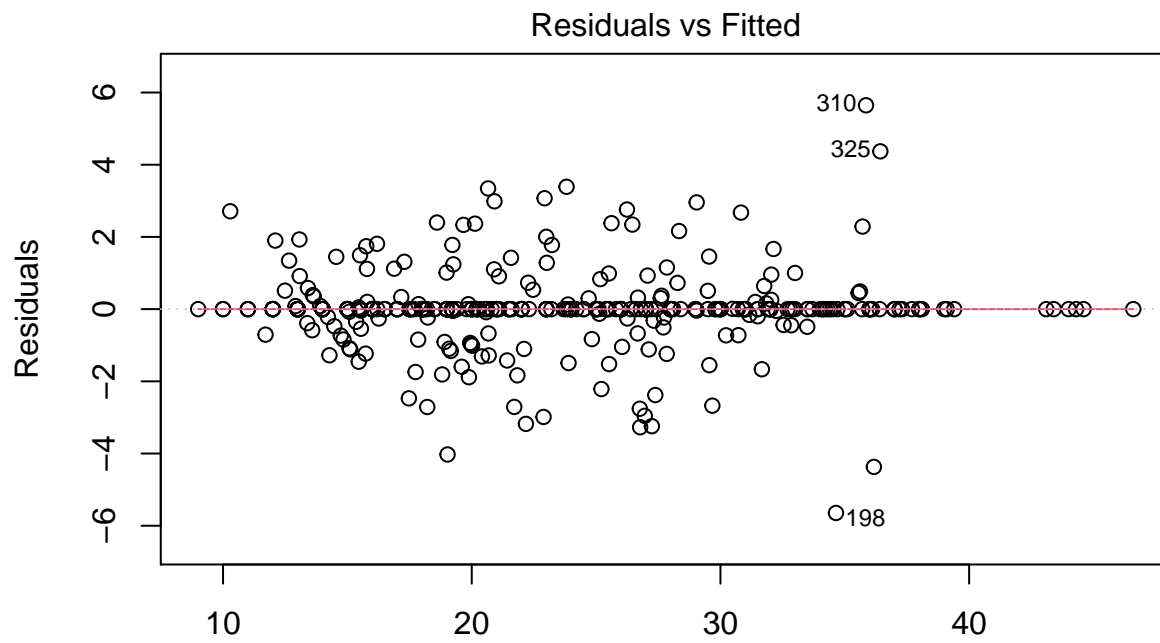
## nametoyota corona liftback
## nametoyota corona mark ii
## nametoyota cressida
## nametoyota mark ii
## nametoyota starlet
## nametoyota tercel
## nametoyouta corona mark ii (sw)
## nametriumph tr7 coupe .
## namevolkswagen rabbit
## namevolkswagen 1131 deluxe sedan
## namevolkswagen 411 (sw)
## namevolkswagen dasher
## namevolkswagen jetta
## namevolkswagen model 111
## namevolkswagen rabbit
## namevolkswagen rabbit custom
## namevolkswagen rabbit custom diesel ***
## namevolkswagen rabbit l
## namevolkswagen scirocco
## namevolkswagen super beetle
## namevolkswagen type 3
## namevolvo 144ea
## namevolvo 145e (sw)
## namevolvo 244dl
## namevolvo 245
## namevolvo 264gl
## namevolvo diesel *
## namevw dasher (diesel) ***
## namevw pickup ***
## namevw rabbit .
## namevw rabbit c (diesel) ***
## namevw rabbit custom
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.272 on 85 degrees of freedom
## Multiple R-squared:  0.9816, Adjusted R-squared:  0.9153
## F-statistic: 14.8 on 306 and 85 DF, p-value: < 2.2e-16
plot(fit)

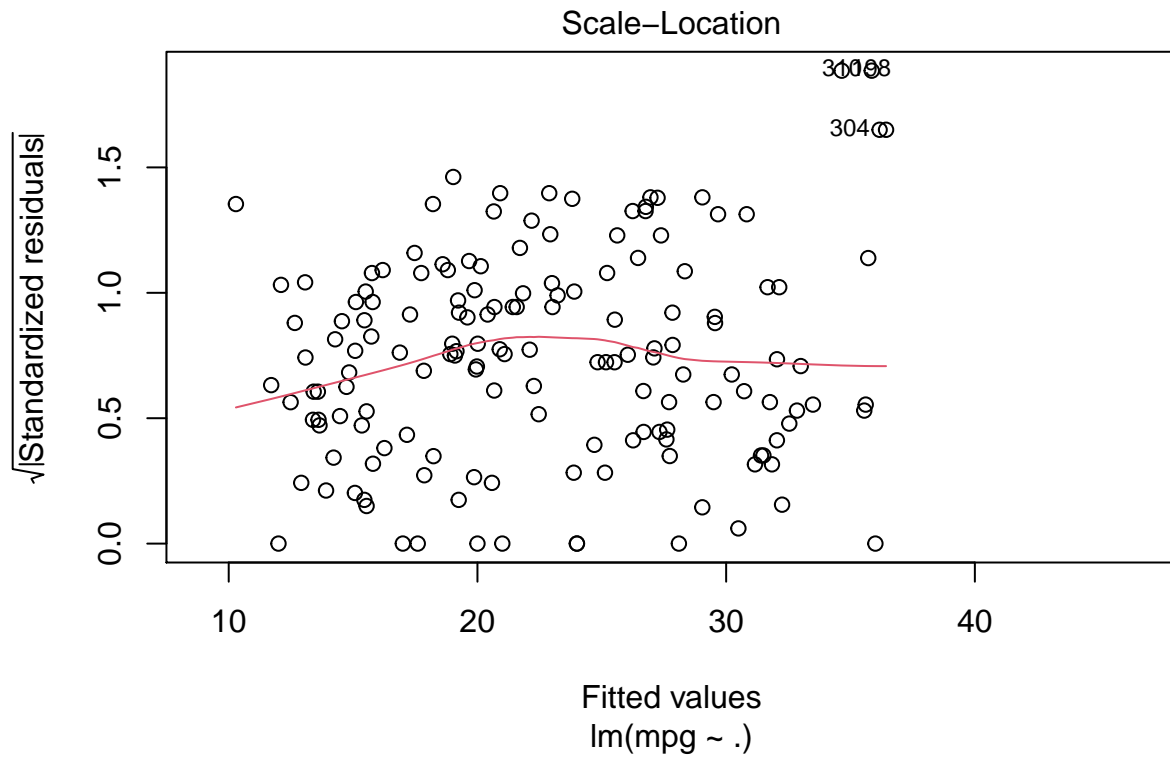
```

```

## Warning: not plotting observations with leverage one:
## 2, 3, 4, 5, 10, 11, 12, 13, 15, 20, 23, 24, 26, 27, 28, 29, 31, 34, 36, 39, 42, 44, 45, 46, 47, 48

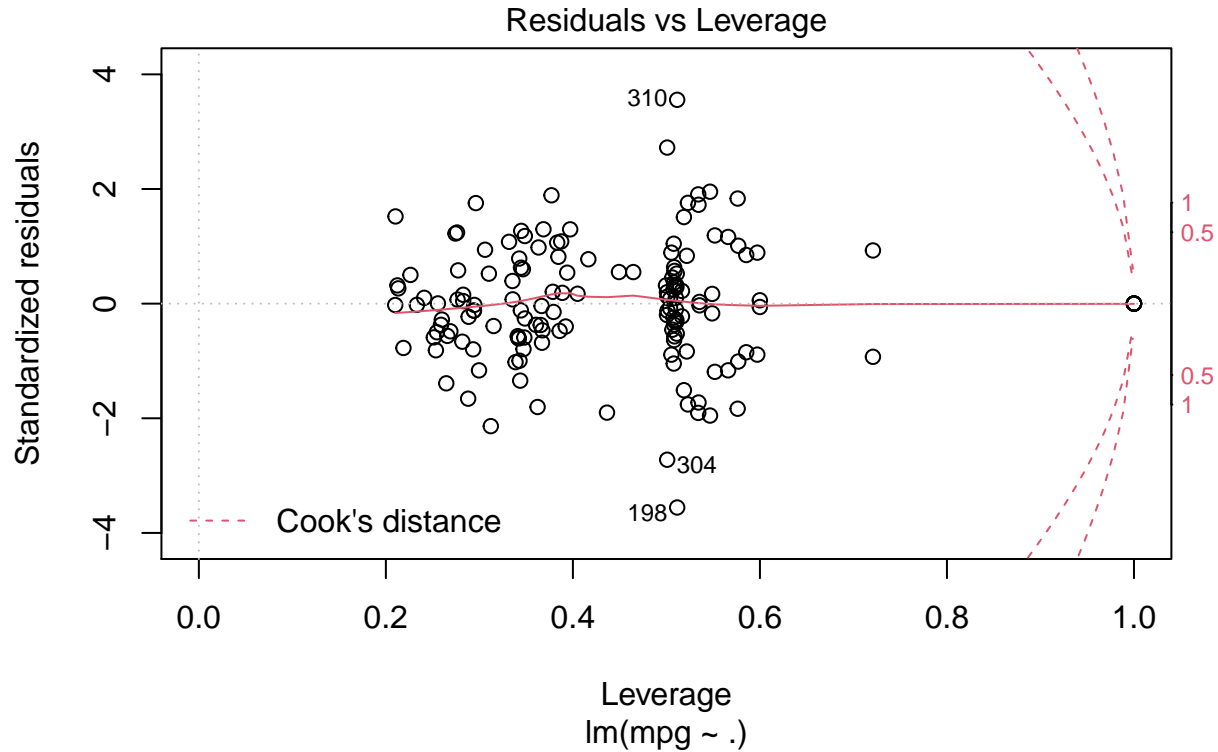
```





```
## Warning in sqrt(crit * p * (1 - hh)/hh): NaNs produced
```

```
## Warning in sqrt(crit * p * (1 - hh)/hh): NaNs produced
```



```
# Use update to add some interaction terms
summary(update(fit, . ~ . + horsepower:weight))
```



```
##
## Call:
## lm(formula = mpg ~ cylinders + displacement + horsepower + weight +
##     acceleration + year + origin + name + horsepower:weight,
##     data = Auto)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -5.842  0.000  0.000  0.000  5.842
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.216e+01  1.258e+01   0.966 0.336678
## cylinders      -7.575e-01  5.845e-01  -1.296 0.198530
## displacement  -1.222e-02  1.544e-02  -0.791 0.431022
## horsepower     -1.649e-01  4.570e-02  -3.608 0.000523
## weight        -8.303e-03  1.675e-03  -4.956 3.68e-06
## acceleration  -4.750e-01  1.621e-01  -2.931 0.004349
## year           6.758e-01  1.066e-01   6.338 1.11e-08
## origin        -4.836e-01  4.044e+00  -0.120 0.905098
## nameamc ambassador dpl    3.266e+00  3.066e+00   1.065 0.289804
## nameamc ambassador sst    3.850e+00  3.093e+00   1.245 0.216699
## nameamc concord          5.893e-01  3.101e+00   0.190 0.849727
## nameamc concord d/l     -6.110e-01  3.249e+00  -0.188 0.851302
## nameamc concord dl 6     6.912e-01  3.340e+00   0.207 0.836548
## nameamc gremlin          8.350e-01  2.820e+00   0.296 0.767847
## nameamc hornet          1.503e+00  2.767e+00   0.543 0.588420
## nameamc hornet sportabout (sw) 1.414e+00  3.376e+00   0.419 0.676319
## nameamc matador          1.538e+00  2.540e+00   0.605 0.546599
## nameamc matador (sw)     2.653e+00  2.737e+00   0.969 0.335288
## nameamc pacer            1.381e+00  3.349e+00   0.412 0.681065
## nameamc pacer d/l       -2.779e-02  3.359e+00  -0.008 0.993418
## nameamc rebel sst        3.970e+00  3.119e+00   1.273 0.206680
## nameamc spirit dl         3.017e-01  3.840e+00   0.079 0.937575
## nameaudi 100 ls          2.500e+00  3.291e+00   0.760 0.449637
## nameaudi 100ls         -1.520e+00  2.860e+00  -0.531 0.596484
## nameaudi 4000            4.579e+00  3.069e+00   1.492 0.139512
## nameaudi 5000           -2.502e+00  3.295e+00  -0.759 0.449787
## nameaudi 5000s (diesel)   1.305e+01  3.327e+00   3.922 0.000178
## nameaudi fox             4.189e+00  3.158e+00   1.326 0.188317
## namebmw 2002             4.460e+00  3.316e+00   1.345 0.182271
## namebmw 320i            -3.502e+00  3.237e+00  -1.082 0.282441
## namebuick century        2.936e+00  2.912e+00   1.008 0.316172
## namebuick century 350     1.081e+00  3.088e+00   0.350 0.727051
## namebuick century limited 1.355e+00  3.451e+00   0.392 0.695685
## namebuick century luxus (sw) 2.504e+00  3.229e+00   0.775 0.440301
## namebuick century special 1.463e+00  3.289e+00   0.445 0.657533
## namebuick electra 225 custom -1.027e+00  3.831e+00  -0.268 0.789297
## namebuick estate wagon (sw) 3.611e+00  2.752e+00   1.312 0.193051
## namebuick lesabre custom  2.867e+00  3.179e+00   0.902 0.369849
## namebuick opel isuzu deluxe 1.501e+00  3.873e+00   0.388 0.699296
## namebuick regal sport coupe (turbo) -1.165e+00  3.472e+00  -0.336 0.737982
## namebuick skyhawk        2.375e+00  3.282e+00   0.724 0.471303
## namebuick skylark        9.796e-01  3.114e+00   0.315 0.753835
```

## namebuick skylark 320	3.938e+00	3.068e+00	1.284	0.202804
## namebuick skylark limited	2.664e+00	3.727e+00	0.715	0.476742
## namecadillac eldorado	8.929e+00	3.272e+00	2.729	0.007737
## namecadillac seville	2.280e+00	3.207e+00	0.711	0.479072
## namecapri ii	3.060e-01	3.754e+00	0.082	0.935235
## namechevrolet chevelle malibu	2.405e+00	3.328e+00	0.723	0.471947
## namechevrolet bel air	3.195e+00	3.150e+00	1.014	0.313366
## namechevrolet camaro	1.114e+00	3.746e+00	0.297	0.766878
## namechevrolet caprice classic	1.755e+00	2.557e+00	0.686	0.494427
## namechevrolet cavalier	1.068e+00	3.842e+00	0.278	0.781761
## namechevrolet cavalier 2-door	5.345e+00	3.865e+00	1.383	0.170318
## namechevrolet cavalier wagon	-2.467e-01	3.845e+00	-0.064	0.948989
## namechevrolet chevelle concours (sw)	2.077e+00	3.182e+00	0.653	0.515748
## namechevrolet chevelle malibu	4.087e+00	2.884e+00	1.417	0.160104
## namechevrolet chevelle malibu classic	2.732e+00	2.814e+00	0.971	0.334446
## namechevrolet chevette	1.007e+00	3.427e+00	0.294	0.769531
## namechevrolet citation	1.115e+00	3.097e+00	0.360	0.719784
## namechevrolet concours	1.786e-01	3.264e+00	0.055	0.956502
## namechevrolet impala	2.444e+00	2.545e+00	0.960	0.339794
## namechevrolet malibu	1.013e+00	2.755e+00	0.368	0.713923
## namechevrolet malibu classic (sw)	2.084e+00	3.186e+00	0.654	0.514889
## namechevrolet monte carlo	3.600e+00	3.362e+00	1.071	0.287313
## namechevrolet monte carlo landau	1.231e+00	2.674e+00	0.460	0.646515
## namechevrolet monte carlo s	3.292e+00	3.115e+00	1.057	0.293610
## namechevrolet monza 2+2	3.221e+00	3.251e+00	0.991	0.324632
## namechevrolet nova	1.443e+00	2.802e+00	0.515	0.608045
## namechevrolet nova custom	9.935e-01	3.324e+00	0.299	0.765758
## namechevrolet vega	-2.054e-01	3.260e+00	-0.063	0.949924
## namechevrolet vega (sw)	6.456e-01	3.739e+00	0.173	0.863327
## namechevrolet vega 2300	5.472e+00	3.758e+00	1.456	0.149164
## namechevrolet woody	-1.439e+00	3.844e+00	-0.374	0.709061
## namechevy c10	-1.269e+00	3.112e+00	-0.408	0.684566
## namechevy c20	2.843e-01	3.752e+00	0.076	0.939784
## namechevy s-10	4.286e+00	3.797e+00	1.129	0.262226
## namechrysler cordoba	1.046e+00	3.170e+00	0.330	0.742301
## namechrysler lebaron medallion	-2.686e+00	3.816e+00	-0.704	0.483464
## namechrysler lebaron salon	-3.298e+00	3.404e+00	-0.969	0.335350
## namechrysler lebaron town @ country (sw)	2.543e+00	3.123e+00	0.814	0.417768
## namechrysler new yorker brougham	4.014e-01	3.518e+00	0.114	0.909430
## namechrysler newport royal	2.094e+00	3.184e+00	0.658	0.512530
## namedatsun 1200	8.835e+00	6.106e+00	1.447	0.151647
## namedatsun 200-sx	-1.856e+00	6.151e+00	-0.302	0.763602
## namedatsun 200sx	6.115e+00	6.163e+00	0.992	0.323966
## namedatsun 210	7.243e+00	5.873e+00	1.233	0.220900
## namedatsun 210 mpg	6.525e+00	6.052e+00	1.078	0.284061
## namedatsun 280-zx	9.634e+00	6.548e+00	1.471	0.144925
## namedatsun 310	6.232e+00	5.949e+00	1.048	0.297831
## namedatsun 310 gx	5.674e+00	5.939e+00	0.955	0.342092
## namedatsun 510	9.075e-01	6.129e+00	0.148	0.882643
## namedatsun 510 (sw)	6.195e+00	6.264e+00	0.989	0.325571
## namedatsun 510 hatchback	9.752e+00	6.116e+00	1.594	0.114603
## namedatsun 610	-5.370e-02	6.262e+00	-0.009	0.993179
## namedatsun 710	3.867e+00	6.005e+00	0.644	0.521429
## namedatsun 810	2.984e-01	6.524e+00	0.046	0.963623

## namedatsun 810 maxima	8.912e-01	6.557e+00	0.136	0.892205
## namedatsun b-210	4.251e+00	6.031e+00	0.705	0.482865
## namedatsun b210	5.018e+00	6.125e+00	0.819	0.414958
## namedatsun b210 gx	1.149e+01	6.076e+00	1.891	0.062126
## namedatsun f-10 hatchback	4.740e+00	6.002e+00	0.790	0.431954
## namedatsun pl510	4.024e+00	5.977e+00	0.673	0.502681
## namedodge aries se	3.927e-02	3.819e+00	0.010	0.991820
## namedodge aries wagon (sw)	-2.103e+00	3.798e+00	-0.554	0.581168
## namedodge aspen	6.723e-01	2.929e+00	0.230	0.819016
## namedodge aspen 6	1.132e+00	3.281e+00	0.345	0.731054
## namedodge aspen se	4.039e+00	3.315e+00	1.219	0.226434
## namedodge challenger se	3.527e+00	3.139e+00	1.124	0.264319
## namedodge charger 2.2	4.877e+00	3.938e+00	1.239	0.218968
## namedodge colt	8.325e-01	3.391e+00	0.245	0.806699
## namedodge colt (sw)	2.861e+00	3.894e+00	0.735	0.464637
## namedodge colt hardtop	6.174e-01	3.852e+00	0.160	0.873042
## namedodge colt hatchback custom	4.319e+00	3.984e+00	1.084	0.281421
## namedodge colt m/m	5.202e+00	3.890e+00	1.337	0.184747
## namedodge coronet brougham	2.048e+00	3.113e+00	0.658	0.512395
## namedodge coronet custom	2.027e+00	3.070e+00	0.660	0.510924
## namedodge coronet custom (sw)	2.162e+00	3.196e+00	0.676	0.500617
## namedodge d100	-1.331e+00	3.076e+00	-0.433	0.666250
## namedodge d200	5.028e-01	3.792e+00	0.133	0.894848
## namedodge dart custom	5.714e-01	3.108e+00	0.184	0.854554
## namedodge diplomat	3.227e+00	3.107e+00	1.038	0.302062
## namedodge magnum xe	2.388e+00	3.111e+00	0.768	0.444909
## namedodge monaco (sw)	1.679e+00	3.467e+00	0.484	0.629503
## namedodge monaco brougham	1.157e+00	3.106e+00	0.372	0.710469
## namedodge omni	1.525e+00	3.914e+00	0.390	0.697721
## namedodge rampage	-1.441e-01	4.012e+00	-0.036	0.971439
## namedodge st. regis	2.512e+00	3.133e+00	0.802	0.424809
## namefiat 124 sport coupe	2.095e+00	3.193e+00	0.656	0.513506
## namefiat 124 tc	-2.088e-01	3.133e+00	-0.067	0.947026
## namefiat 124b	4.863e+00	3.171e+00	1.534	0.128896
## namefiat 128	-6.056e-01	2.752e+00	-0.220	0.826340
## namefiat 131	2.830e+00	3.152e+00	0.898	0.371879
## namefiat strada custom	6.694e+00	3.044e+00	2.199	0.030601
## namefiat x1.9	3.383e+00	3.105e+00	1.090	0.278947
## nameford country	1.527e+00	3.327e+00	0.459	0.647588
## nameford country squire (sw)	1.830e+00	2.740e+00	0.668	0.506138
## nameford escort 2h	1.484e+00	3.852e+00	0.385	0.701006
## nameford escort 4w	1.985e+00	3.980e+00	0.499	0.619213
## nameford f108	-8.535e-01	3.124e+00	-0.273	0.785374
## nameford f250	-2.986e-02	3.805e+00	-0.008	0.993758
## nameford fairmont	1.664e+00	3.724e+00	0.447	0.656118
## nameford fairmont (auto)	-1.712e+00	3.386e+00	-0.506	0.614397
## nameford fairmont (man)	-2.545e-01	3.759e+00	-0.068	0.946181
## nameford fairmont 4	-2.048e+00	3.727e+00	-0.550	0.584066
## nameford fairmont futura	-2.743e+00	3.791e+00	-0.723	0.471401
## nameford fiesta	3.585e+00	4.038e+00	0.888	0.377192
## nameford futura	-5.137e-01	3.204e+00	-0.160	0.872993
## nameford galaxie 500	3.805e+00	2.555e+00	1.489	0.140130
## nameford gran torino	2.314e+00	2.567e+00	0.901	0.369919
## nameford gran torino (sw)	3.586e+00	2.873e+00	1.248	0.215435

## nameford granada	2.240e+00	3.312e+00	0.676	0.500583
## nameford granada ghia	3.293e+00	3.470e+00	0.949	0.345433
## nameford granada gl	-2.568e+00	3.380e+00	-0.760	0.449585
## nameford granada l	-2.142e+00	3.402e+00	-0.630	0.530723
## nameford ltd	2.005e+00	2.773e+00	0.723	0.471721
## nameford ltd landau	5.440e-01	3.151e+00	0.173	0.863347
## nameford maverick	1.486e+00	2.866e+00	0.519	0.605400
## nameford mustang	1.729e+00	3.512e+00	0.492	0.623831
## nameford mustang gl	-7.359e-01	3.811e+00	-0.193	0.847356
## nameford mustang ii	-3.604e+00	3.218e+00	-1.120	0.265987
## nameford mustang ii 2+2	1.220e+00	3.741e+00	0.326	0.745084
## nameford pinto	-8.712e-01	3.118e+00	-0.279	0.780646
## nameford pinto (sw)	-8.519e-01	3.781e+00	-0.225	0.822280
## nameford pinto runabout	-2.403e+00	3.776e+00	-0.637	0.526147
## nameford ranger	2.965e-01	3.801e+00	0.078	0.938009
## nameford thunderbird	2.791e+00	3.118e+00	0.895	0.373131
## nameford torino	4.073e+00	3.172e+00	1.284	0.202666
## nameford torino 500	3.951e+00	3.489e+00	1.132	0.260743
## namehi 1200d	1.103e+00	4.067e+00	0.271	0.786899
## namehonda accord	4.371e+00	5.823e+00	0.751	0.454987
## namehonda accord cvcc	4.084e+00	6.103e+00	0.669	0.505275
## namehonda accord lx	9.940e-01	6.029e+00	0.165	0.869446
## namehonda civic	3.086e+00	5.753e+00	0.536	0.593032
## namehonda civic (auto)	-7.272e-01	5.920e+00	-0.123	0.902522
## namehonda civic 1300	1.361e+00	5.886e+00	0.231	0.817701
## namehonda civic 1500 gl	1.169e+01	5.871e+00	1.992	0.049673
## namehonda civic cvcc	4.283e+00	5.794e+00	0.739	0.461839
## namehonda prelude	3.139e+00	5.977e+00	0.525	0.600810
## namemaxda glc deluxe	2.993e+00	5.918e+00	0.506	0.614282
## namemaxda rx3	-8.105e+00	5.977e+00	-1.356	0.178701
## namemazda 626	4.965e+00	6.001e+00	0.827	0.410348
## namemazda glc	1.685e+01	6.014e+00	2.802	0.006310
## namemazda glc 4	2.382e+00	5.941e+00	0.401	0.689528
## namemazda glc custom	-7.157e-01	5.990e+00	-0.119	0.905176
## namemazda glc custom l	5.868e+00	6.019e+00	0.975	0.332429
## namemazda glc deluxe	3.269e+00	6.040e+00	0.541	0.589786
## namemazda rx-4	-3.505e+00	6.159e+00	-0.569	0.570784
## namemazda rx-7 gs	-5.653e+00	5.963e+00	-0.948	0.345863
## namemazda rx2 coupe	-5.038e+00	6.083e+00	-0.828	0.409932
## namemercedes-benz 240d	8.742e+00	3.496e+00	2.500	0.014355
## namemercedes-benz 280s	6.101e-01	3.768e+00	0.162	0.871755
## namemercedes benz 300d	6.909e+00	3.610e+00	1.914	0.059058
## namemercury capri 2000	-9.431e-01	3.849e+00	-0.245	0.807042
## namemercury capri v6	6.925e-02	3.489e+00	0.020	0.984211
## namemercury cougar brougham	1.617e+00	3.176e+00	0.509	0.611867
## namemercury grand marquis	5.838e-01	3.163e+00	0.185	0.853983
## namemercury lynx l	4.252e+00	3.948e+00	1.077	0.284530
## namemercury marquis	-7.615e-01	3.381e+00	-0.225	0.822368
## namemercury marquis brougham	8.871e-02	3.520e+00	0.025	0.979952
## namemercury monarch	1.381e-01	3.529e+00	0.039	0.968883
## namemercury monarch ghia	3.233e+00	3.124e+00	1.035	0.303601
## namemercury zephyr	-1.899e-01	3.365e+00	-0.056	0.955133
## namemercury zephyr 6	-1.530e+00	3.362e+00	-0.455	0.650216
## namenissan stanza xe	5.670e+00	6.036e+00	0.939	0.350198

## nameoldsmobile cutlass ciera (diesel)	1.495e+01	3.529e+00	4.235	5.82e-05
## nameoldsmobile cutlass ls	1.126e+01	3.523e+00	3.196	0.001963
## nameoldsmobile cutlass salon brougham	5.696e+00	2.945e+00	1.934	0.056439
## nameoldsmobile cutlass supreme	4.524e+00	3.283e+00	1.378	0.171784
## nameoldsmobile delta 88 royale	1.669e+00	3.165e+00	0.527	0.599291
## nameoldsmobile omega	-2.214e+00	3.049e+00	-0.726	0.469627
## nameoldsmobile omega brougham	2.780e+00	3.486e+00	0.798	0.427317
## nameoldsmobile starfire sx	1.110e-01	3.690e+00	0.030	0.976062
## nameoldsmobile vista cruiser	8.055e-02	3.260e+00	0.025	0.980347
## nameopel 1900	1.713e+00	2.758e+00	0.621	0.536377
## nameopel manta	-4.976e-01	2.742e+00	-0.181	0.856415
## namepeugeot 304	6.710e+00	3.288e+00	2.041	0.044428
## namepeugeot 504	4.068e+00	2.904e+00	1.401	0.164937
## namepeugeot 504 (sw)	3.036e+00	3.496e+00	0.868	0.387720
## namepeugeot 505s turbo diesel	5.700e+00	3.423e+00	1.665	0.099630
## namepeugeot 604sl	-2.585e+00	3.673e+00	-0.704	0.483459
## nameplymouth 'cuda 340	9.794e-01	3.142e+00	0.312	0.756058
## nameplymouth arrow gs	-7.350e-01	3.806e+00	-0.193	0.847325
## nameplymouth champ	5.503e+00	4.050e+00	1.359	0.177875
## nameplymouth cricket	2.212e+00	3.889e+00	0.569	0.571087
## nameplymouth custom suburb	1.866e+00	3.249e+00	0.574	0.567295
## nameplymouth duster	3.971e+00	2.858e+00	1.389	0.168415
## nameplymouth fury	3.854e+00	3.362e+00	1.146	0.254873
## nameplymouth fury gran sedan	2.881e+00	3.138e+00	0.918	0.361299
## nameplymouth fury iii	3.232e+00	2.552e+00	1.267	0.208785
## nameplymouth grand fury	4.042e+00	3.206e+00	1.261	0.210886
## nameplymouth horizon	3.018e+00	3.999e+00	0.755	0.452539
## nameplymouth horizon 4	2.555e+00	3.985e+00	0.641	0.523114
## nameplymouth horizon miser	4.577e+00	4.027e+00	1.136	0.259008
## nameplymouth horizon tc3	3.858e+00	3.935e+00	0.981	0.329627
## nameplymouth reliant	-9.083e-01	3.549e+00	-0.256	0.798602
## nameplymouth sapporo	-3.955e-01	3.696e+00	-0.107	0.915055
## nameplymouth satellite	5.672e+00	3.125e+00	1.815	0.073110
## nameplymouth satellite custom	1.607e+00	3.349e+00	0.480	0.632700
## nameplymouth satellite custom (sw)	3.005e+00	3.111e+00	0.966	0.336930
## nameplymouth satellite sebring	2.727e+00	3.317e+00	0.822	0.413372
## nameplymouth valiant	2.371e+00	2.923e+00	0.811	0.419535
## nameplymouth valiant custom	1.194e+00	3.329e+00	0.359	0.720651
## nameplymouth volare	2.049e+00	3.295e+00	0.622	0.535793
## nameplymouth volare custom	2.278e+00	3.308e+00	0.688	0.493091
## nameplymouth volare premier v8	-1.348e+00	3.076e+00	-0.438	0.662311
## namepontiac astro	4.933e-03	3.693e+00	0.001	0.998937
## namepontiac catalina	3.206e+00	2.672e+00	1.200	0.233547
## namepontiac catalina brougham	3.662e+00	3.171e+00	1.155	0.251407
## namepontiac firebird	3.936e+00	3.390e+00	1.161	0.248881
## namepontiac grand prix	2.319e+00	3.459e+00	0.670	0.504425
## namepontiac grand prix lj	1.128e+00	3.112e+00	0.363	0.717787
## namepontiac j2000 se hatchback	2.147e+00	3.878e+00	0.554	0.581262
## namepontiac lemans v6	1.254e+00	3.280e+00	0.382	0.703307
## namepontiac phoenix	3.200e+00	3.440e+00	0.930	0.354960
## namepontiac phoenix lj	2.278e+00	3.286e+00	0.693	0.490052
## namepontiac safari (sw)	3.514e+00	3.530e+00	0.995	0.322382
## namepontiac sunbird coupe	3.324e-01	3.713e+00	0.090	0.928885
## namepontiac ventura sj	2.216e+00	3.276e+00	0.676	0.500634

## namerenault 12 (sw)	2.072e+00	3.212e+00	0.645	0.520771
## namerenault 12tl	2.227e-01	3.099e+00	0.072	0.942877
## namerenault 5 gtl	5.843e+00	3.125e+00	1.870	0.064980
## namesaab 99e	4.963e+00	3.369e+00	1.473	0.144451
## namesaab 99gle	-1.753e+00	3.360e+00	-0.522	0.603147
## namesaab 99le	2.347e+00	2.950e+00	0.796	0.428541
## namesubaru	2.325e+00	5.900e+00	0.394	0.694519
## namesubaru dl	2.871e+00	5.835e+00	0.492	0.623946
## nametoyota carina	-1.845e+00	6.310e+00	-0.292	0.770666
## nametoyota celica gt	4.412e+00	6.174e+00	0.715	0.476813
## nametoyota celica gt liftback	-4.175e+00	6.190e+00	-0.674	0.501855
## nametoyota corolla	2.958e+00	5.737e+00	0.516	0.607535
## nametoyota corolla 1200	5.936e+00	5.978e+00	0.993	0.323576
## nametoyota corolla 1600 (sw)	3.822e+00	6.195e+00	0.617	0.538880
## nametoyota corolla liftback	1.078e-01	6.142e+00	0.018	0.986041
## nametoyota corolla tercel	7.617e+00	6.028e+00	1.263	0.209906
## nametoyota corona	1.607e+00	5.825e+00	0.276	0.783331
## nametoyota corona hardtop	1.839e+00	6.242e+00	0.295	0.768975
## nametoyota corona liftback	4.095e+00	6.209e+00	0.660	0.511364
## nametoyota corona mark ii	3.357e+00	6.294e+00	0.533	0.595193
## nametoyota cressida	1.524e+00	6.513e+00	0.234	0.815608
## nametoyota mark ii	6.397e-01	6.471e+00	0.099	0.921489
## nametoyota starlet	5.506e+00	5.905e+00	0.932	0.353755
## nametoyota tercel	6.458e+00	5.974e+00	1.081	0.282790
## nametoyouta corona mark ii (sw)	1.546e+00	6.272e+00	0.246	0.805937
## nametriumph tr7 coupe	7.406e+00	3.125e+00	2.370	0.020079
## namevolkswagen rabbit	-3.365e+00	3.052e+00	-1.103	0.273385
## namevolkswagen 1131 deluxe sedan	7.066e-01	3.388e+00	0.209	0.835316
## namevolkswagen 411 (sw)	5.232e-01	3.291e+00	0.159	0.874067
## namevolkswagen dasher	-4.883e-01	2.537e+00	-0.192	0.847848
## namevolkswagen jetta	1.661e+00	3.054e+00	0.544	0.587921
## namevolkswagen model 111	1.535e+00	3.259e+00	0.471	0.638805
## namevolkswagen rabbit	-9.320e-01	2.659e+00	-0.351	0.726840
## namevolkswagen rabbit custom	-5.531e-01	3.050e+00	-0.181	0.856528
## namevolkswagen rabbit custom diesel	1.391e+01	3.230e+00	4.306	4.49e-05
## namevolkswagen rabbit l	3.421e+00	3.066e+00	1.116	0.267754
## namevolkswagen scirocco	1.048e+00	3.041e+00	0.345	0.731268
## namevolkswagen super beetle	-3.521e-01	3.311e+00	-0.106	0.915566
## namevolkswagen type 3	1.002e+00	3.448e+00	0.290	0.772169
## namevolvo 144ea	-9.488e-01	3.425e+00	-0.277	0.782449
## namevolvo 145e (sw)	-1.516e+00	3.452e+00	-0.439	0.661732
## namevolvo 244dl	-6.691e-02	3.326e+00	-0.020	0.983997
## namevolvo 245	-1.082e+00	3.398e+00	-0.319	0.750882
## namevolvo 264gl	-3.812e+00	3.463e+00	-1.101	0.274103
## namevolvo diesel	9.013e+00	3.493e+00	2.581	0.011602
## namevw dasher (diesel)	1.609e+01	3.310e+00	4.862	5.35e-06
## namevw pickup	1.487e+01	3.390e+00	4.386	3.33e-05
## namevw rabbit	5.057e+00	2.636e+00	1.918	0.058472
## namevw rabbit c (diesel)	1.448e+01	3.218e+00	4.498	2.18e-05
## namevw rabbit custom	NA	NA	NA	NA
## horsepower:weight	4.225e-05	1.259e-05	3.355	0.001193
##				
## (Intercept)				
## cylinders				

```

## displacement
## horsepower          ***
## weight              ***
## acceleration        **
## year                ***
## origin
## nameamc ambassador dpl
## nameamc ambassador sst
## nameamc concord
## nameamc concord d/l
## nameamc concord dl 6
## nameamc gremlin
## nameamc hornet
## nameamc hornet sportabout (sw)
## nameamc matador
## nameamc matador (sw)
## nameamc pacer
## nameamc pacer d/l
## nameamc rebel sst
## nameamc spirit dl
## nameaudi 100 ls
## nameaudi 100ls
## nameaudi 4000
## nameaudi 5000
## nameaudi 5000s (diesel)    ***
## nameaudi fox
## namebmw 2002
## namebmw 320i
## namebuick century
## namebuick century 350
## namebuick century limited
## namebuick century luxus (sw)
## namebuick century special
## namebuick electra 225 custom
## namebuick estate wagon (sw)
## namebuick lesabre custom
## namebuick opel isuzu deluxe
## namebuick regal sport coupe (turbo)
## namebuick skyhawk
## namebuick skylark
## namebuick skylark 320
## namebuick skylark limited
## namecadillac eldorado    **
## namecadillac seville
## namecapri ii
## namechevrolet chevelle malibu
## namechevrolet bel air
## namechevrolet camaro
## namechevrolet caprice classic
## namechevrolet cavalier
## namechevrolet cavalier 2-door
## namechevrolet cavalier wagon
## namechevrolet chevelle concours (sw)
## namechevrolet chevelle malibu

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## namechevrolet chevelle malibu classic
## namechevrolet chevette
## namechevrolet citation
## namechevrolet concours
## namechevrolet impala
## namechevrolet malibu
## namechevrolet malibu classic (sw)
## namechevrolet monte carlo
## namechevrolet monte carlo landau
## namechevrolet monte carlo s
## namechevrolet monza 2+2
## namechevrolet nova
## namechevrolet nova custom
## namechevrolet vega
## namechevrolet vega (sw)
## namechevrolet vega 2300
## namechevrolet woody
## namechevy c10
## namechevy c20
## namechevy s-10
## namechrysler cordoba
## namechrysler lebaron medallion
## namechrysler lebaron salon
## namechrysler lebaron town @ country (sw)
## namechrysler new yorker brougham
## namechrysler newport royal
## namedatsun 1200
## namedatsun 200-sx
## namedatsun 200sx
## namedatsun 210
## namedatsun 210 mpg
## namedatsun 280-zx
## namedatsun 310
## namedatsun 310 gx
## namedatsun 510
## namedatsun 510 (sw)
## namedatsun 510 hatchback
## namedatsun 610
## namedatsun 710
## namedatsun 810
## namedatsun 810 maxima
## namedatsun b-210
## namedatsun b210
## namedatsun b210 gx
## namedatsun f-10 hatchback
## namedatsun pl510
## namedodge aries se
## namedodge aries wagon (sw)
## namedodge aspen
## namedodge aspen 6
## namedodge aspen se
## namedodge challenger se
## namedodge charger 2.2
## namedodge colt

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## namedodge colt (sw)
## namedodge colt hardtop
## namedodge colt hatchback custom
## namedodge colt m/m
## namedodge coronet brougham
## namedodge coronet custom
## namedodge coronet custom (sw)
## namedodge d100
## namedodge d200
## namedodge dart custom
## namedodge diplomat
## namedodge magnum xe
## namedodge monaco (sw)
## namedodge monaco brougham
## namedodge omni
## namedodge rampage
## namedodge st. regis
## namefiat 124 sport coupe
## namefiat 124 tc
## namefiat 124b
## namefiat 128
## namefiat 131
## namefiat strada custom
## namefiat x1.9
## nameford country
## nameford country squire (sw)
## nameford escort 2h
## nameford escort 4w
## nameford f108
## nameford f250
## nameford fairmont
## nameford fairmont (auto)
## nameford fairmont (man)
## nameford fairmont 4
## nameford fairmont futura
## nameford fiesta
## nameford futura
## nameford galaxie 500
## nameford gran torino
## nameford gran torino (sw)
## nameford granada
## nameford granada ghia
## nameford granada gl
## nameford granada l
## nameford ltd
## nameford ltd landau
## nameford maverick
## nameford mustang
## nameford mustang gl
## nameford mustang ii
## nameford mustang ii 2+2
## nameford pinto
## nameford pinto (sw)
## nameford pinto runabout

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## nameford ranger
## nameford thunderbird
## nameford torino
## nameford torino 500
## namehi 1200d
## namehonda accord
## namehonda accord cvcc
## namehonda accord lx
## namehonda civic
## namehonda civic (auto)
## namehonda civic 1300
## namehonda civic 1500 gl          *
## namehonda civic cvcc
## namehonda prelude
## namemaxda glc deluxe
## namemaxda rx3
## namemazda 626
## namemazda glc                  **
## namemazda glc 4
## namemazda glc custom
## namemazda glc custom l
## namemazda glc deluxe
## namemazda rx-4
## namemazda rx-7 gs
## namemazda rx2 coupe
## namemercedes-benz 240d          *
## namemercedes-benz 280s
## namemercedes benz 300d         .
## namemercury capri 2000
## namemercury capri v6
## namemercury cougar brougham
## namemercury grand marquis
## namemercury lynx l
## namemercury marquis
## namemercury marquis brougham
## namemercury monarch
## namemercury monarch ghia
## namemercury zephyr
## namemercury zephyr 6
## namenissan stanza xe
## nameoldsmobile cutlass ciera (diesel) ***
## nameoldsmobile cutlass ls      **
## nameoldsmobile cutlass salon brougham .
## nameoldsmobile cutlass supreme
## nameoldsmobile delta 88 royale
## nameoldsmobile omega
## nameoldsmobile omega brougham
## nameoldsmobile starfire sx
## nameoldsmobile vista cruiser
## nameopel 1900
## nameopel manta
## namepeugeot 304                *
## namepeugeot 504
## namepeugeot 504 (sw)

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## namepeugeot 505s turbo diesel .
## namepeugeot 604sl
## nameplymouth 'cuda 340
## nameplymouth arrow gs
## nameplymouth champ
## nameplymouth cricket
## nameplymouth custom suburb
## nameplymouth duster
## nameplymouth fury
## nameplymouth fury gran sedan
## nameplymouth fury iii
## nameplymouth grand fury
## nameplymouth horizon
## nameplymouth horizon 4
## nameplymouth horizon miser
## nameplymouth horizon tc3
## nameplymouth reliant
## nameplymouth sapporo
## nameplymouth satellite .
## nameplymouth satellite custom
## nameplymouth satellite custom (sw)
## nameplymouth satellite sebring
## nameplymouth valiant
## nameplymouth valiant custom
## nameplymouth volare
## nameplymouth volare custom
## nameplymouth volare premier v8
## namepontiac astro
## namepontiac catalina
## namepontiac catalina brougham
## namepontiac firebird
## namepontiac grand prix
## namepontiac grand prix lj
## namepontiac j2000 se hatchback
## namepontiac lemans v6
## namepontiac phoenix
## namepontiac phoenix lj
## namepontiac safari (sw)
## namepontiac sunbird coupe
## namepontiac ventura sj
## namerenault 12 (sw)
## namerenault 12tl
## namerenault 5 gtl .
## namesaab 99e
## namesaab 99gle
## namesaab 99le
## namesubaru
## namesubaru dl
## nametoyota carina
## nametoyota celica gt
## nametoyota celica gt liftback
## nametoyota corolla
## nametoyota corolla 1200
## nametoyota corolla 1600 (sw)

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## nametoyota corolla liftback
## nametoyota corolla tercel
## nametoyota corona
## nametoyota corona hardtop
## nametoyota corona liftback
## nametoyota corona mark ii
## nametoyota cressida
## nametoyota mark ii
## nametoyota starlet
## nametoyota tercel
## nametoyota corona mark ii (sw)
## nametriumph tr7 coupe *
## namevolkswagen rabbit
## namevolkswagen 1131 deluxe sedan
## namevolkswagen 411 (sw)
## namevolkswagen dasher
## namevolkswagen jetta
## namevolkswagen model 111
## namevolkswagen rabbit
## namevolkswagen rabbit custom
## namevolkswagen rabbit custom diesel ***
## namevolkswagen rabbit l
## namevolkswagen scirocco
## namevolkswagen super beetle
## namevolkswagen type 3
## namevolvo 144ea
## namevolvo 145e (sw)
## namevolvo 244dl
## namevolvo 245
## namevolvo 264gl
## namevolvo diesel *
## namevw dasher (diesel) ***
## namevw pickup ***
## namevw rabbit .
## namevw rabbit c (diesel) ***
## namevw rabbit custom
## horsepower:weight **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.146 on 84 degrees of freedom
## Multiple R-squared:  0.9838, Adjusted R-squared:  0.9244
## F-statistic: 16.57 on 307 and 84 DF,  p-value: < 2.2e-16

# Let's see if this is indeed a better model:
anova(fit, update(fit, . ~ . + horsepower:weight))

## Analysis of Variance Table
##
## Model 1: mpg ~ cylinders + displacement + horsepower + weight + acceleration +
##   year + origin + name
## Model 2: mpg ~ cylinders + displacement + horsepower + weight + acceleration +
##   year + origin + name + horsepower:weight
##   Res.Df    RSS Df Sum of Sq    F    Pr(>F)
## 1      85 438.73

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```
## 2      84 386.89 1      51.845 11.257 0.001193 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

# Use update to add some nonlinear terms:
# Note that others terms i.e., displacement, weight and acceleration should also have a significant non
summary(update(fit, . ~ . + I(horsepower^2)))

##
## Call:
## lm(formula = mpg ~ cylinders + displacement + horsepower + weight +
##      acceleration + year + origin + name + I(horsepower^2), data = Auto)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -5.778   0.000   0.000   0.000   5.778
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    13.4912421  12.4770550   1.081 0.282665
## cylinders      -0.3144738   0.5993266  -0.525 0.601166
## displacement  -0.0374579   0.0183214  -2.044 0.044037
## horsepower     -0.2621504   0.0659609  -3.974 0.000149
## weight         -0.0002323   0.0015652  -0.148 0.882372
## acceleration   -0.6841611   0.1695856  -4.034 0.000120
## year           0.6208250   0.1049124   5.918 6.87e-08
## origin        -0.7823831   4.0061328  -0.195 0.845633
## nameamc ambassador dpl      2.6987097   3.0379886   0.888 0.376905
## nameamc ambassador sst      2.9788543   3.0578823   0.974 0.332776
## nameamc concord             -0.7650492   3.0649689  -0.250 0.803498
## nameamc concord d/l         -0.7791586   3.2077220  -0.243 0.808674
## nameamc concord dl 6        -0.8545857   3.2847983  -0.260 0.795374
## nameamc gremlin             0.6368018   2.7792261   0.229 0.819325
## nameamc hornet              0.9013961   2.7177902   0.332 0.740968
## nameamc hornet sportabout (sw) 1.5435551   3.3381452   0.462 0.644991
## nameamc matador             0.1842309   2.4936578   0.074 0.941282
## nameamc matador (sw)        1.6619322   2.7332467   0.608 0.544799
## nameamc pacer              -0.4048234   3.2901978  -0.123 0.902370
## nameamc pacer d/l          -0.4608372   3.3030459  -0.140 0.889374
## nameamc rebel sst           3.5070654   3.0732614   1.141 0.257049
## nameamc spirit dl           -1.9881353   3.8677342  -0.514 0.608580
## nameaudi 100 ls             1.2786778   3.2238731   0.397 0.692648
## nameaudi 100ls            -3.0450648   2.7887722  -1.092 0.277998
## nameaudi 4000              4.3461495   3.0325266   1.433 0.155519
## nameaudi 5000             -3.7853253   3.2253961  -1.174 0.243872
## nameaudi 5000s (diesel)     9.0736760   3.3400504   2.717 0.008007
## nameaudi fox               3.9414134   3.1169087   1.265 0.209538
## namebmw 2002               4.5674378   3.2757441   1.394 0.166898
## namebmw 320i              -4.2226894   3.1705142  -1.332 0.186508
## namebuick century          1.4011846   2.8804685   0.486 0.627920
## namebuick century 350       1.0585550   3.0523468   0.347 0.729609
## namebuick century limited    0.8103443   3.4144782   0.237 0.812982
## namebuick century luxus (sw) 1.7513193   3.2187291   0.544 0.587812
## namebuick century special    0.0330588   3.2425309   0.010 0.991890
## namebuick electra 225 custom -0.5686210   3.6599994  -0.155 0.876909
```

## namebuick estate wagon (sw)	2.4857058	2.6944015	0.923	0.358887
## namebuick lesabre custom	2.3158908	3.1596156	0.733	0.465620
## namebuick opel isuzu deluxe	1.2224702	3.8345418	0.319	0.750666
## namebuick regal sport coupe (turbo)	-2.1274837	3.4519333	-0.616	0.539352
## namebuick skyhawk	2.0930220	3.2365910	0.647	0.519606
## namebuick skylark	-0.0659723	3.0800374	-0.021	0.982962
## namebuick skylark 320	3.9832516	3.0341116	1.313	0.192818
## namebuick skylark limited	2.0390088	3.6886037	0.553	0.581878
## namecadillac eldorado	9.5627855	3.2578680	2.935	0.004297
## namecadillac seville	1.9920100	3.1781118	0.627	0.532496
## namecapri ii	-0.4618423	3.7177701	-0.124	0.901433
## namechevrolet chevelle malibu	-0.0254338	3.2887223	-0.008	0.993848
## namechevrolet bel air	2.6341602	3.1236119	0.843	0.401452
## namechevrolet camaro	-0.2690131	3.7212534	-0.072	0.942542
## namechevrolet caprice classic	1.4282013	2.5279990	0.565	0.573611
## namechevrolet cavalier	0.5329066	3.8093007	0.140	0.889077
## namechevrolet cavalier 2-door	5.3894662	3.8210889	1.410	0.162098
## namechevrolet cavalier wagon	-1.1431240	3.8207726	-0.299	0.765537
## namechevrolet chevelle concours (sw)	0.2767795	3.1599923	0.088	0.930412
## namechevrolet chevelle malibu	2.9101426	2.8163485	1.033	0.304428
## namechevrolet chevelle malibu classic	0.5164508	2.8139734	0.184	0.854824
## namechevrolet chevette	0.1336166	3.4262989	0.039	0.968985
## namechevrolet citation	0.4427099	3.0637082	0.145	0.885451
## namechevrolet concours	-0.8673676	3.2107766	-0.270	0.787713
## namechevrolet impala	2.0722869	2.5305589	0.819	0.415158
## namechevrolet malibu	0.2382224	2.7178609	0.088	0.930363
## namechevrolet malibu classic (sw)	0.9432691	3.1523165	0.299	0.765503
## namechevrolet monte carlo	4.4688101	3.3629486	1.329	0.187500
## namechevrolet monte carlo landau	1.3053964	2.6442644	0.494	0.622827
## namechevrolet monte carlo s	3.1084862	3.0791748	1.010	0.315625
## namechevrolet monza 2+2	1.8991995	3.1943025	0.595	0.553737
## namechevrolet nova	0.2088998	2.7401158	0.076	0.939411
## namechevrolet nova custom	0.2650691	3.2626505	0.081	0.935442
## namechevrolet vega	-0.6760630	3.2282120	-0.209	0.834625
## namechevrolet vega (sw)	-0.1282314	3.7068428	-0.035	0.972486
## namechevrolet vega 2300	5.7571784	3.7190718	1.548	0.125378
## namechevrolet woody	-2.0805987	3.8231003	-0.544	0.587733
## namechevy c10	-1.4444219	3.0766631	-0.469	0.639945
## namechevy c20	-1.4364927	3.8531319	-0.373	0.710228
## namechevy s-10	2.9534452	3.7868721	0.780	0.437632
## namechrysler cordoba	1.8692515	3.0930655	0.604	0.547249
## namechrysler lebaron medallion	-2.8581110	3.7744368	-0.757	0.451032
## namechrysler lebaron salon	-6.5956410	3.3950140	-1.943	0.055397
## namechrysler lebaron town @ country (sw)	3.3192169	3.1038937	1.069	0.287965
## namechrysler new yorker brougham	0.8272003	3.3938517	0.244	0.808030
## namechrysler newport royal	2.7011575	3.1100527	0.869	0.387582
## namedatsun 1200	10.5830259	6.0859481	1.739	0.085711
## namedatsun 200-sx	-1.5328724	6.0867086	-0.252	0.801780
## namedatsun 200sx	5.8839801	6.0762025	0.968	0.335642
## namedatsun 210	7.4124797	5.8099610	1.276	0.205535
## namedatsun 210 mpg	7.2971676	6.0012786	1.216	0.227416
## namedatsun 280-zx	8.7766436	6.4303345	1.365	0.175935
## namedatsun 310	6.1131881	5.8791149	1.040	0.301410
## namedatsun 310 gx	6.0229587	5.8793883	1.024	0.308578

## namedatsun 510	1.6059040	6.0827133	0.264	0.792418
## namedatsun 510 (sw)	6.3463018	6.1922945	1.025	0.308367
## namedatsun 510 hatchback	9.8693681	6.0437895	1.633	0.106217
## namedatsun 610	0.0340258	6.1866237	0.005	0.995625
## namedatsun 710	3.7834277	5.9306325	0.638	0.525244
## namedatsun 810	-1.3501601	6.3894396	-0.211	0.833156
## namedatsun 810 maxima	-0.1730593	6.4400879	-0.027	0.978625
## namedatsun b-210	4.5167638	5.9686511	0.757	0.451318
## namedatsun b210	5.4452619	6.0655581	0.898	0.371893
## namedatsun b210 gx	11.7883555	6.0135789	1.960	0.053277
## namedatsun f-10 hatchback	5.2486532	5.9466151	0.883	0.379956
## namedatsun pl510	4.0757286	5.9043551	0.690	0.491914
## namedodge aries se	-0.5682269	3.7855318	-0.150	0.881042
## namedodge aries wagon (sw)	-2.4975717	3.7564186	-0.665	0.507948
## namedodge aspen	-1.0982134	2.8957547	-0.379	0.705460
## namedodge aspen 6	0.1542007	3.2381426	0.048	0.962132
## namedodge aspen se	1.3475469	3.2953515	0.409	0.683636
## namedodge challenger se	4.0920372	3.1240468	1.310	0.193817
## namedodge charger 2.2	4.3432835	3.9019448	1.113	0.268838
## namedodge colt	0.0692770	3.3711306	0.021	0.983653
## namedodge colt (sw)	1.9785659	3.8726491	0.511	0.610756
## namedodge colt hardtop	0.3193319	3.8149754	0.084	0.933490
## namedodge colt hatchback custom	4.8644522	3.9270902	1.239	0.218910
## namedodge colt m/m	5.3526078	3.8435223	1.393	0.167407
## namedodge coronet brougham	1.1665366	3.1012986	0.376	0.707758
## namedodge coronet custom	1.5909917	3.0337462	0.524	0.601360
## namedodge coronet custom (sw)	0.8122908	3.2164860	0.253	0.801241
## namedodge d100	-1.2503521	3.0432147	-0.411	0.682217
## namedodge d200	-1.8097127	3.9745553	-0.455	0.650051
## namedodge dart custom	0.4769412	3.0675554	0.155	0.876817
## namedodge diplomat	3.1266037	3.0710915	1.018	0.311565
## namedodge magnum xe	1.6488272	3.0831309	0.535	0.594208
## namedodge monaco (sw)	1.5553188	3.4142667	0.456	0.649900
## namedodge monaco brougham	0.4189212	3.0836582	0.136	0.892263
## namedodge omni	0.4175843	3.9036970	0.107	0.915067
## namedodge rampage	-0.6319645	3.9742808	-0.159	0.874040
## namedodge st. regis	2.5195953	3.0977286	0.813	0.418306
## namefiat 124 sport coupe	1.7249141	3.1454760	0.548	0.584886
## namefiat 124 tc	-1.1430603	3.0826446	-0.371	0.711716
## namefiat 124b	4.1082264	3.1308137	1.312	0.193030
## namefiat 128	-1.4623593	2.7384678	-0.534	0.594748
## namefiat 131	1.7778849	3.0960830	0.574	0.567342
## namefiat strada custom	5.7081088	3.0178763	1.891	0.062013
## namefiat x1.9	2.6220103	3.0783957	0.852	0.396777
## nameford country	1.9362042	3.2620246	0.594	0.554402
## nameford country squire (sw)	2.2393884	2.7029688	0.828	0.409740
## nameford escort 2h	0.1028438	3.8633544	0.027	0.978826
## nameford escort 4w	1.4462988	3.9525800	0.366	0.715350
## nameford f108	-1.7626125	3.0848564	-0.571	0.569271
## nameford f250	-1.2823453	3.8654079	-0.332	0.740905
## nameford fairmont	0.2586938	3.7037613	0.070	0.944482
## nameford fairmont (auto)	-3.7330905	3.3613311	-1.111	0.269910
## nameford fairmont (man)	-1.6817362	3.7380128	-0.450	0.653941
## nameford fairmont 4	-3.7631642	3.7153227	-1.013	0.314028

## nameford fairmont futura	-4.0924869	3.7700978	-1.086	0.280800
## nameford fiesta	3.8744646	3.9779568	0.974	0.332861
## nameford futura	-0.2961777	3.1725068	-0.093	0.925842
## nameford galaxie 500	3.8740969	2.5243800	1.535	0.128622
## nameford gran torino	1.3803536	2.5538275	0.541	0.590280
## nameford gran torino (sw)	1.8168642	2.9140950	0.623	0.534662
## nameford granada	0.8256505	3.2480642	0.254	0.799964
## nameford granada ghia	-0.0133316	3.3974596	-0.004	0.996878
## nameford granada gl	-4.3257371	3.3529700	-1.290	0.200549
## nameford granada l	-1.3098677	3.3898837	-0.386	0.700174
## nameford ltd	1.4057064	2.7609353	0.509	0.611988
## nameford ltd landau	-0.2019410	3.1081896	-0.065	0.948352
## nameford maverick	-0.0797784	2.8099795	-0.028	0.977418
## nameford mustang	-0.2050623	3.4321510	-0.060	0.952499
## nameford mustang gl	-2.3491935	3.7993860	-0.618	0.538045
## nameford mustang ii	-3.4056246	3.1857646	-1.069	0.288126
## nameford mustang ii 2+2	-0.2629656	3.7200882	-0.071	0.943814
## nameford pinto	-2.2985153	3.1122503	-0.739	0.462246
## nameford pinto (sw)	-1.6332786	3.7485618	-0.436	0.664166
## nameford pinto runabout	-2.3304565	3.7339728	-0.624	0.534239
## nameford ranger	-0.9665395	3.7897668	-0.255	0.799316
## nameford thunderbird	2.8262275	3.0827409	0.917	0.361877
## nameford torino	3.1802053	3.1163690	1.020	0.310429
## nameford torino 500	1.5169634	3.4103216	0.445	0.657597
## namehi 1200d	0.3625240	4.0584381	0.089	0.929035
## namehonda accord	4.1427132	5.7464610	0.721	0.472963
## namehonda accord cvcc	4.6252687	6.0479348	0.765	0.446553
## namehonda accord lx	0.7254444	5.9521495	0.122	0.903286
## namehonda civic	3.2029690	5.6885852	0.563	0.574899
## namehonda civic (auto)	-0.3260908	5.8618619	-0.056	0.955769
## namehonda civic 1300	2.1444439	5.8336879	0.368	0.714099
## namehonda civic 1500 gl	12.1889386	5.8160338	2.096	0.039115
## namehonda civic cvcc	4.7616874	5.7375259	0.830	0.408936
## namehonda prelude	2.9217292	5.8992253	0.495	0.621700
## namemaxda glc deluxe	2.8027986	5.8468409	0.479	0.632921
## namemaxda rx3	-8.2570727	5.8987640	-1.400	0.165257
## namemazda 626	3.8819592	5.8924986	0.659	0.511828
## namemazda glc	16.5605690	5.9401022	2.788	0.006559
## namemazda glc 4	2.7554231	5.8819028	0.468	0.640671
## namemazda glc custom	0.1257715	5.9437158	0.021	0.983168
## namemazda glc custom l	6.5490446	5.9679458	1.097	0.275615
## namemazda glc deluxe	2.5464127	5.9673508	0.427	0.670672
## namemazda rx-4	-4.7837634	6.0434328	-0.792	0.430845
## namemazda rx-7 gs	-6.4639722	5.8653994	-1.102	0.273587
## namemazda rx2 coupe	-5.8330791	5.9809851	-0.975	0.332226
## namemercedes-benz 240d	4.6652441	3.4246244	1.362	0.176756
## namemercedes-benz 280s	-2.5364320	3.7486709	-0.677	0.500505
## namemercedes benz 300d	2.7221631	3.4890661	0.780	0.437467
## namemercury capri 2000	-1.4214282	3.8115460	-0.373	0.710142
## namemercury capri v6	-0.5774685	3.4495857	-0.167	0.867456
## namemercury cougar brougham	-0.3531267	3.1856864	-0.111	0.912001
## namemercury grand marquis	0.8273130	3.1321397	0.264	0.792322
## namemercury lynx l	3.9506085	3.9105693	1.010	0.315282
## namemercury marquis	-0.3803577	3.2826925	-0.116	0.908034

## namemercury marquis brougham	1.1424153	3.3474519	0.341	0.733746
## namemercury monarch	-3.2560243	3.4538491	-0.943	0.348526
## namemercury monarch ghia	2.9832690	3.0846459	0.967	0.336253
## namemercury zephyr	-2.4929542	3.3475955	-0.745	0.458532
## namemercury zephyr 6	-3.1061213	3.3289782	-0.933	0.353466
## namenissan stanza xe	6.8047410	6.0108092	1.132	0.260820
## nameoldsmobile cutlass ciera (diesel)	14.7386046	3.4806083	4.234	5.83e-05
## nameoldsmobile cutlass ls	11.5264743	3.4890086	3.304	0.001404
## nameoldsmobile cutlass salon brougham	4.2797073	2.8920554	1.480	0.142663
## nameoldsmobile cutlass supreme	1.5404185	3.3024200	0.466	0.642100
## nameoldsmobile delta 88 royale	1.3168078	3.1388249	0.420	0.675905
## nameoldsmobile omega	-2.5644180	3.0150465	-0.851	0.397443
## nameoldsmobile omega brougham	2.1044674	3.4465906	0.611	0.543117
## nameoldsmobile starfire sx	-1.3915355	3.6657104	-0.380	0.705194
## nameoldsmobile vista cruiser	-0.3442072	3.2396086	-0.106	0.915638
## nameopel 1900	1.9878655	2.7354641	0.727	0.469429
## nameopel manta	-1.3043643	2.6973235	-0.484	0.629944
## namepeugeot 304	6.3436743	3.2514506	1.951	0.054387
## namepeugeot 504	1.6033833	2.8278074	0.567	0.572222
## namepeugeot 504 (sw)	0.7238651	3.4182129	0.212	0.832802
## namepeugeot 505s turbo diesel	2.8263121	3.3427847	0.845	0.400236
## namepeugeot 604sl	-4.2813572	3.6197013	-1.183	0.240228
## nameplymouth 'cuda 340	0.2242362	3.0952034	0.072	0.942419
## nameplymouth arrow gs	-0.4812877	3.7637529	-0.128	0.898554
## nameplymouth champ	5.5384022	3.9965340	1.386	0.169476
## nameplymouth cricket	2.6673030	3.8317356	0.696	0.488283
## nameplymouth custom suburb	1.6739527	3.2137551	0.521	0.603827
## nameplymouth duster	2.4459263	2.8209979	0.867	0.388389
## nameplymouth fury	0.3823927	3.3606842	0.114	0.909680
## nameplymouth fury gran sedan	2.0661712	3.1233663	0.662	0.510089
## nameplymouth fury iii	2.3696587	2.5589577	0.926	0.357086
## nameplymouth grand fury	2.8851512	3.2180908	0.897	0.372526
## nameplymouth horizon	1.4876501	4.0118718	0.371	0.711711
## nameplymouth horizon 4	0.8454475	4.0150123	0.211	0.833732
## nameplymouth horizon miser	3.3668835	4.0313212	0.835	0.405985
## nameplymouth horizon tc3	2.9391091	3.9210237	0.750	0.455604
## nameplymouth reliant	-1.5308019	3.5186112	-0.435	0.664636
## nameplymouth sapporo	-0.3369919	3.6563651	-0.092	0.926786
## nameplymouth satellite	5.3480111	3.0785598	1.737	0.086021
## nameplymouth satellite custom	-0.6374563	3.3083879	-0.193	0.847676
## nameplymouth satellite custom (sw)	2.3077479	3.0865888	0.748	0.456748
## nameplymouth satellite sebring	0.2246499	3.2947079	0.068	0.945800
## nameplymouth valiant	1.2040298	2.8715826	0.419	0.676074
## nameplymouth valiant custom	-0.7911182	3.2800255	-0.241	0.809994
## nameplymouth volare	0.2124784	3.2543064	0.065	0.948097
## nameplymouth volare custom	-0.2781564	3.2865711	-0.085	0.932754
## nameplymouth volare premier v8	-1.7547058	3.0446591	-0.576	0.565938
## namepontiac astro	-1.0803376	3.6666727	-0.295	0.768998
## namepontiac catalina	3.4431492	2.6164524	1.316	0.191767
## namepontiac catalina brougham	4.2314124	3.1169893	1.358	0.178248
## namepontiac firebird	2.4551648	3.3170243	0.740	0.461260
## namepontiac grand prix	-0.3771782	3.7005765	-0.102	0.919060
## namepontiac grand prix lj	2.0227487	3.0603462	0.661	0.510450
## namepontiac j2000 se hatchback	0.8414393	3.8682593	0.218	0.828328

## namepontiac lemans v6	0.8140282	3.2364159	0.252	0.802025
## namepontiac phoenix	2.6784156	3.4048557	0.787	0.433703
## namepontiac phoenix lj	0.9952129	3.2398481	0.307	0.759467
## namepontiac safari (sw)	3.7305267	3.4520017	1.081	0.282930
## namepontiac sunbird coupe	-0.8337322	3.6813289	-0.226	0.821382
## namepontiac ventura sj	0.6456624	3.2264393	0.200	0.841873
## namerenault 12 (sw)	1.2126101	3.1733046	0.382	0.703331
## namerenault 12tl	-0.0128054	3.0581881	-0.004	0.996669
## namerenault 5 gtl	6.0663126	3.0856369	1.966	0.052604
## namesaab 99e	4.7537706	3.3208915	1.431	0.156005
## namesaab 99gle	-2.3313608	3.2995831	-0.707	0.481794
## namesaab 99le	1.4963482	2.8769887	0.520	0.604356
## namesubaru	2.4516873	5.8330061	0.420	0.675330
## namesubaru dl	3.0210152	5.7709486	0.523	0.602014
## nametoyota carina	-1.3629963	6.2508623	-0.218	0.827920
## nametoyota celica gt	4.2935574	6.0882306	0.705	0.482623
## nametoyota celica gt liftback	-4.0214237	6.1165082	-0.657	0.512676
## nametoyota corolla	2.7164995	5.6605687	0.480	0.632547
## nametoyota corolla 1200	6.9206597	5.9334103	1.166	0.246758
## nametoyota corolla 1600 (sw)	4.5058444	6.1459325	0.733	0.465513
## nametoyota corolla liftback	-0.0569608	6.0640247	-0.009	0.992528
## nametoyota corolla tercel	7.9604848	5.9671635	1.334	0.185794
## nametoyota corona	1.4736580	5.7483672	0.256	0.798299
## nametoyota corona hardtop	2.2407693	6.1801705	0.363	0.717834
## nametoyota corona liftback	3.4136102	6.1028403	0.559	0.577413
## nametoyota corona mark ii	3.1621747	6.2043932	0.510	0.611621
## nametoyota cressida	0.7531143	6.3991274	0.118	0.906594
## nametoyota mark ii	-0.3804554	6.3474013	-0.060	0.952347
## nametoyota starlet	6.2860610	5.8510860	1.074	0.285746
## nametoyota tercel	6.2555023	5.9027204	1.060	0.292289
## nametoyouta corona mark ii (sw)	1.0793329	6.1717868	0.175	0.861593
## nametriumph tr7 coupe	6.8284017	3.0718138	2.223	0.028907
## namevolkswagen rabbit	-3.2219993	3.0164858	-1.068	0.288522
## namevolkswagen 1131 deluxe sedan	0.2721744	3.3599146	0.081	0.935630
## namevolkswagen 411 (sw)	-0.7783205	3.2266907	-0.241	0.809978
## namevolkswagen dasher	-1.3607549	2.5107671	-0.542	0.589275
## namevolkswagen jetta	1.0837055	3.0162488	0.359	0.720280
## namevolkswagen model 111	2.0708934	3.2246964	0.642	0.522494
## namevolkswagen rabbit	-1.0074413	2.6296396	-0.383	0.702606
## namevolkswagen rabbit custom	-0.0383951	3.0258127	-0.013	0.989906
## namevolkswagen rabbit custom diesel	13.2316034	3.2111877	4.120	8.82e-05
## namevolkswagen rabbit l	4.1666751	3.0448404	1.368	0.174824
## namevolkswagen scirocco	0.8516694	3.0081165	0.283	0.777779
## namevolkswagen super beetle	-1.2215056	3.2958805	-0.371	0.711857
## namevolkswagen type 3	-0.3823414	3.4242307	-0.112	0.911361
## namevolvo 144ea	-2.1718341	3.3489156	-0.649	0.518419
## namevolvo 145e (sw)	-3.2200709	3.3722705	-0.955	0.342385
## namevolvo 244dl	-2.3247849	3.2531350	-0.715	0.476820
## namevolvo 245	-3.3511585	3.3232491	-1.008	0.316159
## namevolvo 264gl	-5.4439312	3.3903783	-1.606	0.112093
## namevolvo diesel	5.1076103	3.4678256	1.473	0.144527
## namevw dasher (diesel)	13.8764124	3.3387667	4.156	7.76e-05
## namevw pickup	14.7837501	3.3537401	4.408	3.06e-05
## namevw rabbit	4.7721355	2.6061055	1.831	0.070626

## namevw rabbit c (diesel)	13.3500155	3.2149484	4.152	7.86e-05
## namevw rabbit custom	NA	NA	NA	NA
## I(horsepower^2)	0.0008249	0.0002256	3.657	0.000444
##				
## (Intercept)				
## cylinders				
## displacement	*			
## horsepower	***			
## weight				
## acceleration	***			
## year	***			
## origin				
## nameamc ambassador dpl				
## nameamc ambassador sst				
## nameamc concord				
## nameamc concord d/l				
## nameamc concord dl 6				
## nameamc gremlin				
## nameamc hornet				
## nameamc hornet sportabout (sw)				
## nameamc matador				
## nameamc matador (sw)				
## nameamc pacer				
## nameamc pacer d/l				
## nameamc rebel sst				
## nameamc spirit dl				
## nameaudi 100 ls				
## nameaudi 100ls				
## nameaudi 4000				
## nameaudi 5000				
## nameaudi 5000s (diesel)	**			
## nameaudi fox				
## namebmw 2002				
## namebmw 320i				
## namebuick century				
## namebuick century 350				
## namebuick century limited				
## namebuick century luxus (sw)				
## namebuick century special				
## namebuick electra 225 custom				
## namebuick estate wagon (sw)				
## namebuick lesabre custom				
## namebuick opel isuzu deluxe				
## namebuick regal sport coupe (turbo)				
## namebuick skyhawk				
## namebuick skylark				
## namebuick skylark 320				
## namebuick skylark limited				
## namecadillac eldorado	**			
## namecadillac seville				
## namecapri ii				
## namechevroelt chevelle malibu				
## namechevrolet bel air				
## namechevrolet camaro				

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## namechevrolet caprice classic
## namechevrolet cavalier
## namechevrolet cavalier 2-door
## namechevrolet cavalier wagon
## namechevrolet chevelle concours (sw)
## namechevrolet chevelle malibu
## namechevrolet chevelle malibu classic
## namechevrolet chevette
## namechevrolet citation
## namechevrolet concours
## namechevrolet impala
## namechevrolet malibu
## namechevrolet malibu classic (sw)
## namechevrolet monte carlo
## namechevrolet monte carlo landau
## namechevrolet monte carlo s
## namechevrolet monza 2+2
## namechevrolet nova
## namechevrolet nova custom
## namechevrolet vega
## namechevrolet vega (sw)
## namechevrolet vega 2300
## namechevrolet woody
## namechevy c10
## namechevy c20
## namechevy s-10
## namechrysler cordoba
## namechrysler lebaron medallion
## namechrysler lebaron salon
## namechrysler lebaron town @ country (sw)
## namechrysler new yorker brougham
## namechrysler newport royal
## namedatsun 1200
## namedatsun 200-sx
## namedatsun 200sx
## namedatsun 210
## namedatsun 210 mpg
## namedatsun 280-zx
## namedatsun 310
## namedatsun 310 gx
## namedatsun 510
## namedatsun 510 (sw)
## namedatsun 510 hatchback
## namedatsun 610
## namedatsun 710
## namedatsun 810
## namedatsun 810 maxima
## namedatsun b-210
## namedatsun b210
## namedatsun b210 gx
## namedatsun f-10 hatchback
## namedatsun pl510
## namedodge aries se
## namedodge aries wagon (sw)

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## namedodge aspen
## namedodge aspen 6
## namedodge aspen se
## namedodge challenger se
## namedodge charger 2.2
## namedodge colt
## namedodge colt (sw)
## namedodge colt hardtop
## namedodge colt hatchback custom
## namedodge colt m/m
## namedodge coronet brougham
## namedodge coronet custom
## namedodge coronet custom (sw)
## namedodge d100
## namedodge d200
## namedodge dart custom
## namedodge diplomat
## namedodge magnum xe
## namedodge monaco (sw)
## namedodge monaco brougham
## namedodge omni
## namedodge rampage
## namedodge st. regis
## namefiat 124 sport coupe
## namefiat 124 tc
## namefiat 124b
## namefiat 128
## namefiat 131
## namefiat strada custom
## namefiat x1.9
## nameford country
## nameford country squire (sw)
## nameford escort 2h
## nameford escort 4w
## nameford f108
## nameford f250
## nameford fairmont
## nameford fairmont (auto)
## nameford fairmont (man)
## nameford fairmont 4
## nameford fairmont futura
## nameford fiesta
## nameford futura
## nameford galaxie 500
## nameford gran torino
## nameford gran torino (sw)
## nameford granada
## nameford granada ghia
## nameford granada gl
## nameford granada l
## nameford ltd
## nameford ltd landau
## nameford maverick
## nameford mustang
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## nameford mustang gl
## nameford mustang ii
## nameford mustang ii 2+2
## nameford pinto
## nameford pinto (sw)
## nameford pinto runabout
## nameford ranger
## nameford thunderbird
## nameford torino
## nameford torino 500
## namehi 1200d
## namehonda accord
## namehonda accord cvcc
## namehonda accord lx
## namehonda civic
## namehonda civic (auto)
## namehonda civic 1300
## namehonda civic 1500 gl          *
## namehonda civic cvcc
## namehonda prelude
## namemaxda glc deluxe
## namemaxda rx3
## namemazda 626
## namemazda glc                  **
## namemazda glc 4
## namemazda glc custom
## namemazda glc custom l
## namemazda glc deluxe
## namemazda rx-4
## namemazda rx-7 gs
## namemazda rx2 coupe
## namemercedes-benz 240d
## namemercedes-benz 280s
## namemercedes benz 300d
## namemercury capri 2000
## namemercury capri v6
## namemercury cougar brougham
## namemercury grand marquis
## namemercury lynx l
## namemercury marquis
## namemercury marquis brougham
## namemercury monarch
## namemercury monarch ghia
## namemercury zephyr
## namemercury zephyr 6
## namenissan stanza xe
## nameoldsmobile cutlass ciera (diesel) ***
## nameoldsmobile cutlass ls          **
## nameoldsmobile cutlass salon brougham
## nameoldsmobile cutlass supreme
## nameoldsmobile delta 88 royale
## nameoldsmobile omega
## nameoldsmobile omega brougham
## nameoldsmobile starfire sx

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## nameoldsmobile vista cruiser
## nameopel 1900
## nameopel manta
## namepeugeot 304
## namepeugeot 504
## namepeugeot 504 (sw)
## namepeugeot 505s turbo diesel
## namepeugeot 604sl
## nameplymouth 'cuda 340
## nameplymouth arrow gs
## nameplymouth champ
## nameplymouth cricket
## nameplymouth custom suburb
## nameplymouth duster
## nameplymouth fury
## nameplymouth fury gran sedan
## nameplymouth fury iii
## nameplymouth grand fury
## nameplymouth horizon
## nameplymouth horizon 4
## nameplymouth horizon miser
## nameplymouth horizon tc3
## nameplymouth reliant
## nameplymouth sapporo
## nameplymouth satellite
## nameplymouth satellite custom
## nameplymouth satellite custom (sw)
## nameplymouth satellite sebring
## nameplymouth valiant
## nameplymouth valiant custom
## nameplymouth volare
## nameplymouth volare custom
## nameplymouth volare premier v8
## namepontiac astro
## namepontiac catalina
## namepontiac catalina brougham
## namepontiac firebird
## namepontiac grand prix
## namepontiac grand prix lj
## namepontiac j2000 se hatchback
## namepontiac lemans v6
## namepontiac phoenix
## namepontiac phoenix lj
## namepontiac safari (sw)
## namepontiac sunbird coupe
## namepontiac ventura sj
## namerenault 12 (sw)
## namerenault 12tl
## namerenault 5 gtl
## namesaab 99e
## namesaab 99gle
## namesaab 99le
## namesubaru
## namesubaru dl

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## nametoyota carina
## nametoyota celica gt
## nametoyota celica gt liftback
## nametoyota corolla
## nametoyota corolla 1200
## nametoyota corolla 1600 (sw)
## nametoyota corolla liftback
## nametoyota corolla tercel
## nametoyota corona
## nametoyota corona hardtop
## nametoyota corona liftback
## nametoyota corona mark ii
## nametoyota cressida
## nametoyota mark ii
## nametoyota starlet
## nametoyota tercel
## nametoyouta corona mark ii (sw)
## nametriumph tr7 coupe *
## namevolkswagen rabbit
## namevolkswagen 1131 deluxe sedan
## namevolkswagen 411 (sw)
## namevolkswagen dasher
## namevolkswagen jetta
## namevolkswagen model 111
## namevolkswagen rabbit
## namevolkswagen rabbit custom
## namevolkswagen rabbit custom diesel ***
## namevolkswagen rabbit l
## namevolkswagen scirocco
## namevolkswagen super beetle
## namevolkswagen type 3
## namevolvo 144ea
## namevolvo 145e (sw)
## namevolvo 244dl
## namevolvo 245
## namevolvo 264gl
## namevolvo diesel
## namevw dasher (diesel) ***
## namevw pickup ***
## namevw rabbit .
## namevw rabbit c (diesel) ***
## namevw rabbit custom
## I(horsepower^2) ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.123 on 84 degrees of freedom
## Multiple R-squared:  0.9841, Adjusted R-squared:  0.926
## F-statistic: 16.95 on 307 and 84 DF, p-value: < 2.2e-16

```