```
> x<-rnorm(50)
> x
 [1]  0.13868617  0.45146373  1.21477412 -1.32448112 -1.13962778
 [6]  1.67564857  0.39814621  0.71551914 -0.79319514  1.92385165
[11]  0.07043999  0.46928004 -0.08985209  0.89415163 -0.37370988
[16]  2.25825190  1.57310178 -1.95432173 -0.61932243 -0.02994773
[21] -1.72165842 -1.05345680 -0.57066248  0.48271439  0.09592389
[26] -0.58783979 -0.08178004  2.88841825  1.17282535  0.54964322
[31]  0.77910451 -0.56513125  0.10295429  0.28152151 -0.47443117
[36] -0.45800421  0.50154317 -0.40512938 -0.17738559 -0.31954457
[41]  0.84345039  0.48365665 -0.30367015 -0.28509610  0.98043668
[46] -0.17131947  1.34301314 -0.09835844 -0.32199548 -1.91473450
> hist(x)
> hist(x)
> hist(x,br=c(-2,-1.5,0,3))
> hist(x)
> hist(x,br=c(-2,-1.5,0,3))
> ?hist
> hist(x,breaks =c(-2,-1.5,0,3))
> hist(x,br =c(-2,-1.5,0,3))
> hist(x,bre =c(-2,-1.5,0,3))
> x<-c(1.5,2.5,3.5,4.5,5.5,6.5,8.5,9.5,12.5) y<-c(5,7,12,2,1,4,14,2,3)
Error: unexpected symbol in "x<-c(1.5,2.5,3.5,4.5,5.5,6.5,8.5,9.5,12.5) y"
> z<-rep(x,y)
Error: object 'y' not found
> x<-c(1.5,2.5,3.5,4.5,5.5,6.5,8.5,9.5,12.5); y<-c(5,7,12,2,1,4,14,2,3)
> z<-rep(x,y)
> z
 [1]  1.5  1.5  1.5  1.5  1.5  2.5  2.5  2.5  2.5  2.5  2.5  2.5  3.5
[14]  3.5  3.5  3.5  3.5  3.5  3.5  3.5  3.5  3.5  3.5  4.5  4.5
[27]  5.5  6.5  6.5  6.5  6.5  8.5  8.5  8.5  8.5  8.5  8.5  8.5  8.5
[40]  8.5  8.5  8.5  8.5  8.5  8.5  9.5  9.5 12.5 12.5 12.5
> hist(z)
> hist(z,br=c(0,1,2,3,5,7,9,10,11,13))
>  x<-rnorm(100)
>  n <- length(x)
> plot(sort(x),(1:n)/n,type="s",ylim=c(0,1))
> qqnorm(x)
> x<-rnorm(10000)
> qqnorm(x)
> data(IgM)
> IgM
  [1] 0.1 0.1 0.1 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.3 0.3 0.3 0.3 0.3 0.3
 [17] 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.4 0.4 0.4
 [33] 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4
 [49] 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
 [65] 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
```

```
 [81] 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6
 [97] 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6
[113] 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.7 0.7 0.7 0.7 0.7
[129] 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7
[145] 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7
[161] 0.7 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8
[177] 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8
[193] 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9
[209] 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 1.0 1.0 1.0
[225] 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.1 1.1 1.1
[241] 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.2 1.2 1.2
[257] 1.2 1.2 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.4 1.4 1.4 1.4 1.4 1.4
[273] 1.4 1.4 1.4 1.5 1.5 1.5 1.5 1.5 1.5 1.6 1.6 1.7 1.7 1.7 1.8 1.8
[289] 1.8 2.0 2.0 2.0 2.1 2.1 2.2 2.5 2.7 4.5
> boxplot(lgM)
> boxplot(sin(lgM))
> par(mfrow=c(1,2))
> boxplot(lgM)
> boxplot(sin(lgM))
> par(mfrow=c(2,2))
> par(mfrow=c(2,2))
> boxplot(lgM)
> boxplot(sin(lgM))
> boxplot(cos(lgM))
> boxplot(log(lgM))
> par(mfcol=c(2,2))
> par(mfcol=c(2,2))
> boxplot(lgM)
> boxplot(sin(lgM))
> boxplot(cos(lgM))
> boxplot(log(lgM))
> par(mfcol=c(2,2))
> boxplot(lgM)
> boxplot(sin(lgM));title("sin")
> boxplot(cos(lgM));title("cos")
> boxplot(log(lgM));title("log")
>  caff.marital <- matrix(c(652,1537,598,242,36,46,38,21,218, 327,106,67),
nrow=3,byrow=T)
> caff.marital
     [,1] [,2] [,3] [,4]
[1,]  652 1537  598  242
[2,]   36   46   38   21
[3,]  218  327  106   67
> colnames(caff.marital) <- c("0","1-150","151-300",">300")
> caff.marital
       0 1-150 151-300 >300
[1,] 652  1537     598  242
```

```
[2,]  36    46      38   21
[3,] 218   327     106   67
> rownames(caff.marital) <- c("Married","Prev.married","Single")
> caff.marital
              0 1-150 151-300 >300
Married      652  1537     598  242
Prev.married  36    46      38   21
Single       218   327     106   67
> names(dimnames(caff.marital)) <- c("marital","consumption")
> caff.marital
             consumption
marital          0 1-150 151-300 >300
  Married      652  1537     598  242
  Prev.married  36    46      38   21
  Single       218   327     106   67
> data(red.cell.folate)
> red.cell.folate
   folate ventilation
1     243  N2O+O2,24h
2     251  N2O+O2,24h
3     275  N2O+O2,24h
4     291  N2O+O2,24h
5     347  N2O+O2,24h
6     354  N2O+O2,24h
7     380  N2O+O2,24h
8     392  N2O+O2,24h
9     206   N2O+O2,op
10    210   N2O+O2,op
11    226   N2O+O2,op
12    249   N2O+O2,op
13    255   N2O+O2,op
14    273   N2O+O2,op
15    285   N2O+O2,op
16    295   N2O+O2,op
17    309   N2O+O2,op
18    241      O2,24h
19    258      O2,24h
20    270      O2,24h
21    293      O2,24h
22    328      O2,24h
> attach(red.cell.folate)
> xbar=tapply(folate,ventilation,mean)
> xbar
N2O+O2,24h  N2O+O2,op     O2,24h
  316.6250   256.4444   278.0000
> s=tapply(folate,ventilation,sd)
> n=tapply(folate,ventilation,length)
```

```
> s
N2O+O2,24h  N2O+O2,op     O2,24h
  58.71709   37.12180   33.75648
> n
N2O+O2,24h  N2O+O2,op     O2,24h
         8          9          5
> cbind(mean=xbar,std.dev=s,n=n)
               mean  std.dev n
N2O+O2,24h 316.6250 58.71709 8
N2O+O2,op  256.4444 37.12180 9
O2,24h     278.0000 33.75648 5
> rbind(mean=xbar,std.dev=s,n=n)
        N2O+O2,24h N2O+O2,op    O2,24h
mean     316.62500  256.4444 278.00000
std.dev   58.71709   37.1218  33.75648
n          8.00000    9.0000   5.00000
> data(juul)
> tapply(igf1,tanner,mean)
 1  2  3  4  5
NA NA NA NA NA
>
> juul[1:10,]
    age menarche sex igf1 tanner testvol
1    NA       NA  NA   90     NA      NA
2    NA       NA  NA   88     NA      NA
3    NA       NA  NA  164     NA      NA
4    NA       NA  NA  166     NA      NA
5    NA       NA  NA  131     NA      NA
6  0.17       NA   1  101      1      NA
7  0.17       NA   1   97      1      NA
8  0.17       NA   1  106      1      NA
9  0.17       NA   1  111      1      NA
10 0.17       NA   1   79      1      NA
> tapply(igf1,tanner,mean,na.rm=T)
       1        2        3        4        5
207.4727 352.6714 483.2222 513.0172 465.3344
> data(juul)
> juul[1:10,]
    age menarche sex igf1 tanner testvol
1    NA       NA  NA   90     NA      NA
2    NA       NA  NA   88     NA      NA
3    NA       NA  NA  164     NA      NA
4    NA       NA  NA  166     NA      NA
5    NA       NA  NA  131     NA      NA
6  0.17       NA   1  101      1      NA
7  0.17       NA   1   97      1      NA
8  0.17       NA   1  106      1      NA
```

```
9  0.17       NA   1  111      1      NA
10 0.17       NA   1   79      1      NA
> table(sex)
sex
  1   2
621 713
> table(menarche)
menarche
  1   2
369 335
> table(sex,menarche)
   menarche
sex   1   2
  1   0   0
  2 369 335
> table(menarche,tanner)
       tanner
menarche   1   2   3   4   5
       1 221  43  32  14   2
       2   1   1   5  26 202
> table(sex,menarche,tanner)
, , tanner = 1

   menarche
sex   1   2
  1   0   0
  2 221   1

, , tanner = 2

   menarche
sex   1   2
  1   0   0
  2  43   1

, , tanner = 3

   menarche
sex   1   2
  1   0   0
  2  32   5

, , tanner = 4

   menarche
sex   1   2
  1   0   0
```

```
  2  14  26

, , tanner = 5

   menarche
sex   1   2
  1   0   0
  2   2 202

> table(menarche,tanner,sex)
, , sex = 1

        tanner
menarche   1   2   3   4   5
       1   0   0   0   0   0
       2   0   0   0   0   0

, , sex = 2

        tanner
menarche   1   2   3   4   5
       1 221  43  32  14   2
       2   1   1   5  26 202

> table(tanner,sex)
      sex
tanner   1   2
     1 291 224
     2  55  48
     3  34  38
     4  41  40
     5 124 204
> margin.table(table(tanner,sex),1)
tanner
  1   2   3   4   5
515 103  72  81 328
> margin.table(table(tanner,sex),2)
sex
  1   2
545 554
> prop.table(table(tanner,sex),1)
      sex
tanner         1         2
     1 0.5650485 0.4349515
     2 0.5339806 0.4660194
     3 0.4722222 0.5277778
     4 0.5061728 0.4938272
```

```
     5 0.3780488 0.6219512
> prop.table(table(tanner,sex),2)
      sex
tanner          1          2
     1 0.53394495 0.40433213
     2 0.10091743 0.08664260
     3 0.06238532 0.06859206
     4 0.07522936 0.07220217
     5 0.22752294 0.36823105
>
> prop.table(table(tanner,sex))
      sex
tanner          1          2
     1 0.26478617 0.20382166
     2 0.05004550 0.04367607
     3 0.03093722 0.03457689
     4 0.03730664 0.03639672
     5 0.11282985 0.18562329
>
> table(tanner,sex)/sum(table(tanner,sex))
      sex
tanner          1          2
     1 0.26478617 0.20382166
     2 0.05004550 0.04367607
     3 0.03093722 0.03457689
     4 0.03730664 0.03639672
     5 0.11282985 0.18562329
> library(ISwR)
> data(thuesen)
> thuesen
   blood.glucose short.velocity
1           15.3           1.76
2           10.8           1.34
3            8.1           1.27
4           19.5           1.47
5            7.2           1.27
6            5.3           1.49
7            9.3           1.31
8           11.1           1.09
9            7.5           1.18
10          12.2           1.22
11           6.7           1.25
12           5.2           1.19
13          19.0           1.95
14          15.1           1.28
15           6.7           1.52
16           8.6             NA
```

```
17          4.2          1.12
18         10.3          1.37
19         12.5          1.19
20         16.1          1.05
21         13.3          1.32
22          4.9          1.03
23          8.8          1.12
24          9.5          1.70
> a<- transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose))
Error: unexpected symbol in "a<-
transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose"
> a
       age menarche  sex igf1 tanner testvol
1       NA       NA <NA>   90     NA      NA
2       NA       NA <NA>   88     NA      NA
3       NA       NA <NA>  164     NA      NA
4       NA       NA <NA>  166     NA      NA
5       NA       NA <NA>  131     NA      NA
6     0.17       NA    f  101      1      NA
7     0.17       NA    f   97      1      NA
8     0.17       NA    f  106      1      NA
9     0.17       NA    f  111      1      NA
10    0.17       NA    f   79      1      NA
11    0.17       NA    f   43      1      NA
12    0.17       NA    f   64      1      NA
13    0.25       NA    f   90      1      NA
14    0.25       NA    f  141      1      NA
15    0.42       NA    f   42      1      NA
16    0.50       NA    f   43      1      NA
17    0.67       NA    f  132      1      NA
18    0.75       NA    f   43      1      NA
19    0.75       NA    f   36      1      NA
20    1.00       NA    f   86      1      NA
21    1.16       NA    f   44      1      NA
22    1.50       NA    f   68      1      NA
23    1.50       NA    f   89      1      NA
24    1.58       NA    f  101      1      NA
25    1.67       NA    f  115      1      NA
26    1.67       NA    f   53      1      NA
27    1.75       NA    f   94      1      NA
28    1.83       NA    f   95      1      NA
29    1.92       NA    f   76      1      NA
30    2.00       NA    f   79      1      NA
31    2.00       NA    f   71      1      NA
32    2.20       NA    f  121      1      NA
33    2.41       NA    f  201      1      NA
34    2.42       NA    f   96      1      NA
```

35	2.42	NA	f	29	1	NA
36	2.83	NA	f	80	1	NA
37	3.00	NA	f	117	1	NA
38	3.08	NA	f	38	1	NA
39	3.08	NA	f	100	1	NA
40	3.16	NA	f	108	1	NA
41	3.16	NA	f	52	1	NA
42	4.08	NA	f	106	1	NA
43	4.16	NA	f	182	1	NA
44	4.66	NA	f	195	1	NA
45	4.83	NA	f	210	1	NA
46	4.92	NA	f	204	1	NA
47	5.16	NA	f	67	1	NA
48	5.28	NA	f	NA	1	1
49	5.41	NA	f	68	1	NA
50	5.50	NA	f	148	1	NA
51	5.60	NA	f	NA	1	1
52	5.85	NA	f	NA	1	1
53	5.98	NA	f	NA	1	1
54	5.98	NA	f	NA	1	1
55	6.00	NA	f	98	1	1
56	6.01	NA	f	NA	1	1
57	6.08	NA	f	242	1	1
58	6.16	NA	f	NA	1	1
59	6.20	NA	f	NA	1	1
60	6.22	NA	f	NA	1	1
61	6.26	NA	f	196	1	1
62	6.30	NA	f	NA	1	1
63	6.35	NA	f	NA	1	1
64	6.40	NA	f	NA	1	1
65	6.40	NA	f	NA	1	1
66	6.40	NA	f	179	1	1
67	6.41	NA	f	NA	1	1
68	6.42	NA	f	NA	1	1
69	6.42	NA	f	126	1	1
70	6.43	NA	f	NA	1	1
71	6.43	NA	f	142	1	1
72	6.48	NA	f	NA	1	1
73	6.49	NA	f	NA	1	1
74	6.50	NA	f	NA	1	1
75	6.51	NA	f	NA	1	1
76	6.51	NA	f	NA	1	1
77	6.58	NA	f	NA	1	1
78	6.60	NA	f	NA	1	1
79	6.61	NA	f	NA	1	1
80	6.61	NA	f	236	1	1
81	6.63	NA	f	148	1	2

82	6.64	NA	f	NA	1	1
83	6.70	NA	f	174	1	1
84	6.72	NA	f	136	1	1
85	6.72	NA	f	164	1	1
86	6.76	NA	f	160	1	1
87	6.84	NA	f	215	1	1
88	6.86	NA	f	NA	1	1
89	6.87	NA	f	NA	1	1
90	6.89	NA	f	214	NA	NA
91	6.90	NA	f	NA	1	1
92	6.90	NA	f	NA	1	1
93	6.90	NA	f	328	1	1
94	6.91	NA	f	367	1	1
95	6.93	NA	f	NA	1	1
96	6.94	NA	f	NA	1	1
97	6.97	NA	f	NA	1	1
98	6.98	NA	f	NA	1	1
99	7.01	NA	f	NA	1	1
100	7.04	NA	f	149	1	1
101	7.07	NA	f	NA	1	1
102	7.07	NA	f	187	1	1
103	7.08	NA	f	NA	1	1
104	7.22	NA	f	103	1	1
105	7.24	NA	f	NA	1	1
106	7.24	NA	f	145	1	1
107	7.25	NA	f	NA	1	1
108	7.25	NA	f	117	1	1
109	7.26	NA	f	88	1	1
110	7.29	NA	f	NA	1	1
111	7.29	NA	f	186	1	1
112	7.30	NA	f	235	1	1
113	7.36	NA	f	NA	1	1
114	7.47	NA	f	NA	1	1
115	7.48	NA	f	300	1	1
116	7.49	NA	f	188	1	1
117	7.50	NA	f	NA	1	1
118	7.50	NA	f	110	1	1
119	7.50	NA	f	198	1	1
120	7.54	NA	f	134	1	1
121	7.54	NA	f	46	1	1
122	7.64	NA	f	NA	1	1
123	7.79	NA	f	NA	1	1
124	7.81	NA	f	NA	1	1
125	7.82	NA	f	NA	1	1
126	7.88	NA	f	221	1	1
127	7.90	NA	f	225	1	1
128	8.01	NA	f	NA	1	1

129	8.04	NA	f	NA	1	1
130	8.09	NA	f	166	1	1
131	8.10	NA	f	324	1	1
132	8.11	NA	f	NA	1	1
133	8.14	NA	f	146	1	1
134	8.19	NA	f	485	1	1
135	8.20	NA	f	152	1	1
136	8.25	NA	f	278	1	1
137	8.27	NA	f	315	1	2
138	8.30	NA	f	206	1	1
139	8.31	NA	f	624	1	1
140	8.33	NA	f	318	1	1
141	8.33	NA	f	187	1	1
142	8.37	NA	f	141	1	1
143	8.39	NA	f	NA	1	1
144	8.44	NA	f	152	1	1
145	8.44	NA	f	219	1	1
146	8.54	NA	f	169	1	1
147	8.55	NA	f	NA	1	3
148	8.62	NA	f	115	1	1
149	8.64	NA	f	223	1	1
150	8.64	NA	f	295	1	1
151	8.65	NA	f	NA	1	1
152	8.65	NA	f	117	1	1
153	8.68	NA	f	416	1	1
154	8.69	NA	f	NA	1	1
155	8.69	NA	f	149	1	2
156	8.72	NA	f	NA	1	1
157	8.80	NA	f	160	1	1
158	8.80	NA	f	99	1	1
159	8.83	NA	f	NA	1	1
160	8.83	NA	f	490	1	1
161	8.85	NA	f	NA	1	1
162	8.86	NA	f	NA	1	1
163	8.88	NA	f	NA	1	1
164	8.89	NA	f	101	1	1
165	8.90	NA	f	238	1	1
166	8.91	NA	f	283	1	1
167	8.96	1	m	NA	1	NA
168	8.96	NA	f	NA	1	1
169	8.96	NA	f	279	1	1
170	8.97	NA	f	NA	1	1
171	9.00	NA	f	NA	1	2
172	9.01	NA	f	171	1	1
173	9.05	NA	f	NA	1	1
174	9.07	NA	f	NA	1	2
175	9.09	NA	f	224	1	2

176	9.13	NA	f	174	1	1
177	9.14	NA	f	179	1	1
178	9.23	NA	f	104	1	1
179	9.25	NA	f	NA	1	1
180	9.32	NA	f	NA	1	1
181	9.33	NA	f	279	1	1
182	9.34	NA	f	NA	1	1
183	9.38	NA	f	NA	1	1
184	9.41	NA	f	222	1	1
185	9.42	NA	f	156	1	1
186	9.43	NA	f	288	1	1
187	9.45	NA	f	269	1	2
188	9.46	NA	f	262	1	2
189	9.48	NA	f	NA	1	2
190	9.49	NA	f	NA	1	1
191	9.50	NA	f	NA	1	2
192	9.50	NA	f	NA	2	2
193	9.55	NA	f	264	1	1
194	9.56	NA	f	240	1	2
195	9.56	NA	f	126	1	1
196	9.56	NA	f	158	1	1
197	9.59	NA	f	258	1	1
198	9.59	NA	f	146	1	1
199	9.60	NA	f	NA	1	1
200	9.64	NA	f	203	1	1
201	9.68	NA	f	288	1	2
202	9.71	NA	f	NA	1	1
203	9.71	NA	f	NA	1	1
204	9.74	NA	f	151	1	2
205	9.74	NA	f	161	1	2
206	9.75	NA	f	179	1	1
207	9.76	NA	f	209	1	1
208	9.79	NA	f	NA	1	1
209	9.80	NA	f	292	1	1
210	9.82	NA	f	NA	1	2
211	9.83	NA	f	284	1	1
212	9.83	NA	f	295	1	1
213	9.89	NA	f	NA	1	1
214	9.92	NA	f	138	1	2
215	10.03	NA	f	NA	1	1
216	10.03	NA	f	224	2	2
217	10.04	NA	f	204	1	2
218	10.17	NA	f	245	1	1
219	10.18	NA	f	267	1	1
220	10.26	NA	f	195	1	1
221	10.26	NA	f	418	1	2
222	10.26	NA	f	223	1	1

223	10.27	NA	f	232	1	1
224	10.37	NA	f	138	1	2
225	10.40	NA	f	190	1	2
226	10.41	NA	f	NA	1	1
227	10.41	NA	f	234	1	2
228	10.42	NA	f	218	1	1
229	10.43	NA	f	272	1	1
230	10.43	NA	f	367	1	1
231	10.44	NA	f	239	1	1
232	10.46	NA	f	222	1	1
233	10.48	NA	f	163	1	2
234	10.49	NA	f	NA	1	1
235	10.50	NA	f	180	2	4
236	10.51	NA	f	347	1	1
237	10.52	NA	f	154	1	1
238	10.57	NA	f	NA	1	3
239	10.57	NA	f	NA	1	2
240	10.60	NA	f	312	1	2
241	10.61	NA	f	211	1	2
242	10.62	NA	f	231	1	1
243	10.65	NA	f	281	1	1
244	10.68	NA	f	465	2	8
245	10.70	NA	f	171	1	1
246	10.71	NA	f	388	1	1
247	10.73	NA	f	NA	1	1
248	10.74	NA	f	NA	1	2
249	10.74	NA	f	244	1	3
250	10.77	NA	f	201	1	2
251	10.80	NA	f	184	1	1
252	10.83	NA	f	NA	1	1
253	10.92	NA	f	NA	1	1
254	10.92	NA	f	NA	1	2
255	11.03	NA	f	NA	1	2
256	11.03	NA	f	225	1	1
257	11.07	NA	f	NA	1	1
258	11.09	NA	f	280	2	2
259	11.14	NA	f	179	1	2
260	11.16	NA	f	NA	NA	2
261	11.19	NA	f	246	1	1
262	11.22	NA	f	157	1	1
263	11.22	NA	f	280	2	5
264	11.23	NA	f	284	1	1
265	11.25	NA	f	NA	1	1
266	11.27	NA	f	201	1	2
267	11.31	NA	f	NA	1	2
268	11.34	NA	f	239	1	1
269	11.35	NA	f	261	1	4

270	11.36	NA	f	NA	1	1
271	11.38	NA	f	329	1	1
272	11.38	NA	f	227	1	1
273	11.39	NA	f	271	1	2
274	11.39	NA	f	NA	3	8
275	11.42	NA	f	383	1	1
276	11.42	NA	f	NA	1	3
277	11.42	NA	f	NA	2	5
278	11.47	NA	f	NA	3	NA
279	11.50	NA	f	164	1	3
280	11.51	NA	f	NA	2	2
281	11.53	NA	f	417	1	2
282	11.54	NA	f	781	3	5
283	11.61	NA	f	214	1	2
284	11.67	NA	f	NA	1	3
285	11.69	NA	f	232	1	4
286	11.69	NA	f	NA	1	1
287	11.70	NA	f	194	1	1
288	11.71	NA	f	NA	1	1
289	11.80	NA	f	284	2	5
290	11.84	NA	f	299	1	2
291	11.85	NA	f	NA	2	3
292	11.86	NA	f	NA	NA	NA
293	11.87	NA	f	NA	3	12
294	11.94	NA	f	186	1	1
295	11.94	NA	f	271	1	1
296	11.94	NA	f	281	2	3
297	11.96	NA	f	NA	2	6
298	11.99	NA	f	NA	1	3
299	11.99	NA	f	252	2	4
300	12.01	NA	f	71	1	2
301	12.01	NA	f	NA	2	7
302	12.02	NA	f	NA	3	NA
303	12.05	NA	f	237	1	5
304	12.06	NA	f	188	1	2
305	12.06	NA	f	325	3	10
306	12.11	NA	f	208	2	4
307	12.13	NA	f	290	2	4
308	12.16	NA	f	279	2	6
309	12.18	NA	f	410	3	15
310	12.26	NA	f	251	2	4
311	12.29	NA	f	NA	1	2
312	12.29	NA	f	153	1	2
313	12.30	NA	f	269	2	8
314	12.31	NA	f	299	3	10
315	12.33	NA	f	163	2	6
316	12.35	NA	f	348	1	2

317	12.38	NA	f	NA	2	6
318	12.40	NA	f	548	2	8
319	12.42	NA	f	NA	1	2
320	12.42	NA	f	269	1	4
321	12.43	NA	f	493	3	7
322	12.44	NA	f	258	1	1
323	12.46	NA	f	419	1	3
324	12.47	NA	f	387	2	11
325	12.48	NA	f	NA	2	5
326	12.54	NA	f	NA	2	6
327	12.60	NA	f	336	1	3
328	12.60	NA	f	233	1	2
329	12.63	NA	f	447	2	10
330	12.63	NA	f	565	4	15
331	12.65	NA	f	549	2	7
332	12.71	NA	f	400	3	15
333	12.76	NA	f	432	2	8
334	12.76	NA	f	271	2	3
335	12.77	NA	f	868	3	8
336	12.81	NA	f	266	1	2
337	12.83	NA	f	279	2	6
338	12.86	NA	f	491	5	18
339	12.88	NA	f	NA	2	3
340	12.90	NA	f	419	2	5
341	12.92	NA	f	NA	3	NA
342	12.93	NA	f	NA	3	NA
343	13.01	1	m	682	2	NA
344	13.03	NA	f	157	2	5
345	13.06	NA	f	188	1	3
346	13.10	NA	f	193	3	10
347	13.11	NA	f	150	1	3
348	13.13	NA	f	NA	2	8
349	13.19	NA	f	493	4	12
350	13.20	NA	f	NA	2	8
351	13.21	NA	f	NA	2	6
352	13.31	NA	f	495	1	3
353	13.33	NA	f	345	2	5
354	13.36	NA	f	167	3	6
355	13.44	NA	f	915	4	10
356	13.47	NA	f	488	3	6
357	13.48	NA	f	422	5	25
358	13.50	NA	f	287	2	6
359	13.52	NA	f	374	3	8
360	13.53	NA	f	242	1	1
361	13.56	NA	f	363	3	10
362	13.56	NA	f	NA	3	8
363	13.57	NA	f	NA	2	9

364	13.72	NA	f	290	2	8
365	13.75	NA	f	275	2	4
366	13.77	NA	f	NA	2	6
367	13.77	NA	f	499	4	25
368	13.78	NA	f	448	2	12
369	13.82	NA	f	NA	1	4
370	13.92	NA	f	652	4	23
371	13.98	NA	f	490	2	15
372	13.99	NA	f	504	3	12
373	14.03	NA	f	NA	3	8
374	14.04	NA	f	435	5	12
375	14.08	NA	f	348	2	8
376	14.11	NA	f	653	2	12
377	14.15	NA	f	288	2	8
378	14.16	NA	f	453	5	22
379	14.19	NA	f	NA	2	5
380	14.22	NA	f	743	5	18
381	14.23	NA	f	NA	3	NA
382	14.26	NA	f	680	3	12
383	14.26	NA	f	498	4	15
384	14.27	NA	f	599	5	20
385	14.29	NA	f	487	5	25
386	14.30	NA	f	NA	4	NA
387	14.33	NA	f	701	4	15
388	14.43	NA	f	NA	2	8
389	14.54	NA	f	518	3	10
390	14.55	NA	f	NA	4	NA
391	14.56	NA	f	517	2	8
392	14.56	NA	f	NA	3	NA
393	14.58	NA	f	336	4	15
394	14.59	NA	f	722	3	12
395	14.63	NA	f	568	4	18
396	14.67	NA	f	322	2	8
397	14.69	NA	f	801	4	20
398	14.74	NA	f	548	5	25
399	14.76	NA	f	305	3	8
400	14.83	NA	f	564	3	12
401	14.83	NA	f	473	4	12
402	14.84	NA	f	669	4	15
403	14.90	NA	f	NA	4	NA
404	14.94	NA	f	377	2	6
405	14.94	NA	f	311	3	12
406	15.01	NA	f	533	4	23
407	15.13	NA	f	NA	4	22
408	15.21	NA	f	NA	4	NA
409	15.22	NA	f	NA	4	NA
410	15.23	NA	f	374	3	12

411	15.25	NA	f	349	2	8
412	15.26	NA	f	747	5	15
413	15.33	NA	f	443	5	15
414	15.33	NA	f	590	5	20
415	15.40	NA	f	581	5	15
416	15.48	NA	f	470	4	15
417	15.49	NA	f	391	5	15
418	15.50	NA	f	668	3	12
419	15.52	NA	f	NA	4	NA
420	15.52	NA	f	442	5	NA
421	15.56	NA	f	NA	4	NA
422	15.57	NA	f	600	5	NA
423	15.59	NA	f	838	5	20
424	15.59	NA	f	608	5	12
425	15.63	NA	f	559	5	20
426	15.66	NA	f	449	4	20
427	15.66	NA	f	619	4	23
428	15.67	NA	f	393	2	12
429	15.68	NA	f	366	5	20
430	15.69	NA	f	503	5	18
431	15.71	NA	f	364	4	12
432	15.72	NA	f	NA	5	NA
433	15.73	NA	f	327	4	20
434	15.76	NA	f	541	3	10
435	15.77	NA	f	430	2	11
436	15.80	NA	f	NA	3	NA
437	15.80	NA	f	488	3	12
438	15.83	NA	f	NA	5	NA
439	15.84	NA	f	352	5	15
440	15.85	NA	f	364	5	20
441	15.93	NA	f	402	5	15
442	15.95	NA	f	NA	4	NA
443	15.95	NA	f	349	5	25
444	16.00	NA	f	447	5	15
445	16.01	NA	f	477	5	15
446	16.03	NA	f	483	5	25
447	16.03	NA	f	504	5	20
448	16.04	NA	f	581	5	15
449	16.09	NA	f	518	4	10
450	16.09	NA	f	412	5	18
451	16.11	NA	f	558	5	22
452	16.14	NA	f	737	5	20
453	16.22	NA	f	501	4	20
454	16.22	NA	f	479	4	15
455	16.28	NA	f	321	5	20
456	16.34	NA	f	488	5	15
457	16.37	NA	f	417	5	10

458	16.38	NA	f	479	5	10
459	16.41	NA	f	391	5	13
460	16.42	NA	f	696	5	15
461	16.46	NA	f	480	5	25
462	16.49	NA	f	484	5	18
463	16.51	NA	f	457	5	20
464	16.54	NA	f	406	5	12
465	16.55	NA	f	632	5	24
466	16.57	NA	f	551	4	18
467	16.59	NA	f	603	5	16
468	16.61	NA	f	473	5	20
469	16.75	NA	f	461	4	20
470	16.77	NA	f	785	4	12
471	16.77	NA	f	553	5	22
472	16.77	NA	f	738	5	20
473	16.78	NA	f	362	4	12
474	16.79	NA	f	453	5	20
475	16.86	NA	f	616	4	19
476	16.87	NA	f	NA	5	NA
477	16.90	NA	f	482	5	22
478	16.93	NA	f	NA	5	NA
479	16.96	NA	f	371	5	17
480	17.06	NA	f	517	5	22
481	17.08	NA	f	285	5	15
482	17.08	NA	f	520	5	23
483	17.12	NA	f	434	4	20
484	17.13	NA	f	NA	5	NA
485	17.18	NA	f	464	5	22
486	17.19	NA	f	476	5	22
487	17.20	NA	f	405	5	18
488	17.20	NA	f	396	5	20
489	17.25	NA	f	428	5	20
490	17.25	NA	f	618	5	18
491	17.33	NA	f	361	4	15
492	17.33	NA	f	NA	5	20
493	17.42	NA	f	467	5	15
494	17.43	NA	f	360	5	16
495	17.45	NA	f	469	5	18
496	17.51	NA	f	429	4	12
497	17.56	NA	f	505	5	25
498	17.57	NA	f	398	5	25
499	17.57	NA	f	491	5	15
500	17.60	NA	f	419	5	18
501	17.61	NA	f	389	5	25
502	17.61	NA	f	440	5	23
503	17.65	NA	f	496	4	15
504	17.68	NA	f	389	5	20

505	17.73	NA	f	535	5	20
506	17.74	NA	f	312	5	23
507	17.79	NA	f	389	4	12
508	17.80	NA	f	407	5	20
509	17.81	NA	f	404	5	15
510	17.91	NA	f	489	5	15
511	17.98	NA	f	420	5	20
512	18.06	NA	f	444	5	18
513	18.15	NA	f	476	5	22
514	18.18	NA	f	525	4	15
515	18.21	NA	f	390	5	23
516	18.21	NA	f	768	5	25
517	18.24	NA	f	364	5	22
518	18.24	NA	f	419	5	25
519	18.28	NA	f	318	NA	18
520	18.37	NA	f	444	5	25
521	18.40	NA	f	500	5	23
522	18.41	NA	f	440	5	30
523	18.46	NA	f	421	5	23
524	18.49	NA	f	523	5	21
525	18.55	NA	f	434	5	12
526	18.55	NA	f	355	5	20
527	18.55	NA	f	290	5	25
528	18.59	NA	f	358	5	22
529	18.59	NA	f	503	5	22
530	18.62	NA	f	360	5	20
531	18.63	NA	f	450	5	16
532	18.63	NA	f	503	5	20
533	18.70	NA	f	462	5	23
534	18.71	NA	f	368	5	25
535	18.78	NA	f	528	5	20
536	18.79	NA	f	397	5	18
537	18.82	NA	f	387	5	20
538	18.82	NA	f	518	5	15
539	18.83	NA	f	364	5	15
540	18.88	NA	f	409	5	16
541	18.92	NA	f	492	5	15
542	18.94	NA	f	412	5	20
543	18.99	NA	f	495	5	20
544	19.00	NA	f	471	5	20
545	19.23	NA	f	286	5	23
546	19.31	NA	f	630	5	20
547	19.44	NA	f	259	5	25
548	19.45	NA	f	326	5	25
549	19.47	NA	f	394	5	22
550	19.62	NA	f	431	5	20
551	19.79	NA	f	421	5	25

552	19.87	NA	f	356	5	20
553	20.00	NA	f	332	NA	NA
554	20.16	NA	f	291	5	22
555	21.00	NA	f	418	NA	NA
556	23.00	NA	f	293	NA	NA
557	24.00	NA	f	223	NA	NA
558	24.29	NA	f	286	5	NA
559	24.41	NA	f	238	NA	NA
560	24.79	NA	f	232	NA	NA
561	24.92	NA	f	296	NA	NA
562	25.00	NA	f	241	NA	NA
563	25.00	NA	f	217	NA	NA
564	25.00	NA	f	354	NA	NA
565	25.00	NA	f	307	NA	NA
566	26.00	NA	f	190	NA	NA
567	27.00	NA	f	261	NA	NA
568	27.16	NA	f	236	NA	NA
569	27.83	NA	f	292	NA	NA
570	28.00	NA	f	242	NA	NA
571	28.00	NA	f	246	NA	NA
572	28.00	NA	f	395	NA	NA
573	28.00	NA	f	347	NA	NA
574	28.00	NA	f	248	NA	NA
575	29.00	NA	f	261	NA	NA
576	29.00	NA	f	223	NA	NA
577	30.00	NA	f	356	NA	NA
578	30.00	NA	f	304	NA	NA
579	30.05	NA	f	261	NA	NA
580	31.00	NA	f	183	NA	NA
581	31.20	NA	f	172	5	15
582	32.00	NA	f	215	NA	NA
583	36.34	NA	f	205	NA	NA
584	37.00	NA	f	107	NA	NA
585	37.00	NA	f	178	NA	NA
586	38.00	NA	f	185	NA	NA
587	39.00	NA	f	221	NA	NA
588	40.00	NA	f	176	NA	NA
589	40.57	NA	f	170	NA	NA
590	40.83	NA	f	256	NA	NA
591	41.00	NA	f	257	NA	NA
592	42.00	NA	f	232	NA	NA
593	42.00	NA	f	158	NA	NA
594	45.00	NA	f	203	NA	NA
595	47.00	NA	f	174	NA	NA
596	47.00	NA	f	223	NA	NA
597	47.00	NA	f	171	NA	NA
598	48.00	NA	f	203	NA	NA

599	49.00	NA	f	89	NA	NA
600	50.00	NA	f	176	NA	NA
601	50.00	NA	f	135	NA	NA
602	50.00	NA	f	193	NA	NA
603	51.00	NA	f	150	NA	NA
604	51.68	NA	f	151	NA	NA
605	52.00	NA	f	191	NA	NA
606	53.00	NA	f	159	NA	NA
607	53.00	NA	f	138	NA	NA
608	53.19	NA	f	133	NA	NA
609	54.00	NA	f	197	NA	NA
610	55.24	NA	f	168	NA	NA
611	56.71	NA	f	167	NA	NA
612	57.00	NA	f	139	NA	NA
613	57.00	NA	f	174	NA	NA
614	59.00	NA	f	134	NA	NA
615	60.00	NA	f	105	NA	NA
616	63.00	NA	f	160	NA	NA
617	65.00	NA	f	92	NA	NA
618	67.00	NA	f	222	NA	NA
619	70.05	NA	f	NA	NA	NA
620	77.00	NA	f	126	NA	NA
621	78.00	NA	f	90	NA	NA
622	79.00	NA	f	119	NA	NA
623	80.00	NA	f	122	NA	NA
624	81.00	NA	f	112	NA	NA
625	81.00	NA	f	87	NA	NA
626	83.00	NA	f	149	NA	NA
627	83.00	NA	f	104	NA	NA
628	0.25	NA	m	51	1	NA
629	0.91	NA	m	25	NA	NA
630	2.64	1	m	NA	1	NA
631	3.25	NA	m	250	NA	NA
632	5.12	1	m	NA	1	NA
633	5.68	1	m	NA	1	NA
634	5.76	1	m	179	1	NA
635	5.82	1	m	163	1	NA
636	5.82	1	m	191	1	NA
637	5.87	1	m	106	1	NA
638	5.91	1	m	NA	1	NA
639	5.92	1	m	NA	1	NA
640	6.00	1	m	218	1	NA
641	6.00	1	m	151	1	NA
642	6.00	1	m	173	1	NA
643	6.00	1	m	171	1	NA
644	6.00	1	m	190	1	NA
645	6.00	1	m	153	1	NA

646	6.00	1	m	139	1	NA
647	6.00	1	m	205	1	NA
648	6.02	1	m	NA	1	NA
649	6.06	1	m	NA	1	NA
650	6.09	1	m	NA	1	NA
651	6.14	1	m	168	1	NA
652	6.17	1	m	200	1	NA
653	6.18	1	m	NA	1	NA
654	6.20	1	m	169	1	NA
655	6.20	1	m	123	1	NA
656	6.21	1	m	139	NA	NA
657	6.22	1	m	388	1	NA
658	6.23	1	m	223	NA	NA
659	6.25	1	m	93	1	NA
660	6.31	1	m	NA	1	NA
661	6.32	1	m	NA	1	NA
662	6.35	1	m	328	NA	NA
663	6.35	1	m	NA	1	NA
664	6.35	1	m	NA	1	NA
665	6.39	1	m	178	1	NA
666	6.46	1	m	157	1	NA
667	6.47	1	m	212	NA	NA
668	6.48	1	m	NA	1	NA
669	6.60	1	m	NA	1	NA
670	6.60	1	m	272	1	NA
671	6.61	1	m	NA	1	NA
672	6.62	1	m	NA	1	NA
673	6.67	1	m	NA	1	NA
674	6.69	1	m	NA	1	NA
675	6.69	1	m	NA	1	NA
676	6.69	1	m	113	1	NA
677	6.72	1	m	202	1	NA
678	6.73	1	m	NA	1	NA
679	6.74	1	m	278	1	NA
680	6.74	1	m	228	1	NA
681	6.77	1	m	NA	1	NA
682	6.78	1	m	NA	1	NA
683	6.79	1	m	NA	1	NA
684	6.80	1	m	235	1	NA
685	6.80	1	m	405	1	NA
686	6.81	1	m	NA	1	NA
687	6.81	1	m	NA	1	NA
688	6.83	1	m	190	1	NA
689	6.84	1	m	NA	1	NA
690	6.84	1	m	247	1	NA
691	6.86	1	m	NA	1	NA
692	6.86	1	m	NA	1	NA

693	6.89	1	m	NA	1	NA
694	6.92	1	m	NA	1	NA
695	6.92	1	m	NA	1	NA
696	6.98	1	m	NA	1	NA
697	6.99	1	m	NA	1	NA
698	6.99	1	m	286	1	NA
699	7.00	1	m	NA	1	NA
700	7.02	1	m	187	1	NA
701	7.03	1	m	209	1	NA
702	7.03	1	m	196	1	NA
703	7.03	1	m	137	1	NA
704	7.06	1	m	NA	1	NA
705	7.10	1	m	NA	1	NA
706	7.12	1	m	NA	1	NA
707	7.14	1	m	NA	1	NA
708	7.14	1	m	NA	1	NA
709	7.15	1	m	NA	1	NA
710	7.17	1	m	202	1	NA
711	7.20	1	m	223	NA	NA
712	7.20	1	m	NA	1	NA
713	7.25	1	m	NA	1	NA
714	7.26	1	m	NA	1	NA
715	7.47	1	m	177	1	NA
716	7.55	1	m	NA	1	NA
717	7.55	1	m	322	1	NA
718	7.57	1	m	142	NA	NA
719	7.58	1	m	NA	1	NA
720	7.62	1	m	NA	1	NA
721	7.62	1	m	NA	1	NA
722	7.62	1	m	NA	1	NA
723	7.62	1	m	NA	1	NA
724	7.65	1	m	414	NA	NA
725	7.65	1	m	181	1	NA
726	7.68	1	m	NA	1	NA
727	7.68	1	m	304	1	NA
728	7.68	1	m	NA	1	NA
729	7.69	1	m	199	NA	NA
730	7.71	1	m	NA	1	NA
731	7.72	1	m	NA	1	NA
732	7.78	1	m	212	NA	NA
733	7.82	1	m	232	NA	NA
734	7.84	1	m	268	1	NA
735	7.86	1	m	186	1	NA
736	7.90	1	m	289	NA	NA
737	7.90	1	m	NA	1	NA
738	7.95	1	m	NA	1	NA
739	7.96	1	m	143	NA	NA

740	7.97	1	m	NA	1	NA
741	7.99	1	m	NA	1	NA
742	8.00	1	m	171	NA	NA
743	8.03	1	m	NA	1	NA
744	8.08	1	m	NA	1	NA
745	8.13	1	m	210	1	NA
746	8.17	1	m	564	NA	NA
747	8.18	1	m	NA	1	NA
748	8.22	1	m	NA	1	NA
749	8.29	1	m	NA	1	NA
750	8.31	1	m	278	1	NA
751	8.31	1	m	229	1	NA
752	8.34	1	m	255	1	NA
753	8.38	1	m	250	NA	NA
754	8.38	1	m	168	1	NA
755	8.42	1	m	NA	1	NA
756	8.45	1	m	NA	1	NA
757	8.48	1	m	NA	1	NA
758	8.50	1	m	NA	1	NA
759	8.51	1	m	234	1	NA
760	8.53	1	m	NA	1	NA
761	8.53	1	m	307	1	NA
762	8.54	1	m	233	1	NA
763	8.55	1	m	NA	1	NA
764	8.56	1	m	141	NA	NA
765	8.57	1	m	234	1	NA
766	8.58	1	m	242	NA	NA
767	8.58	1	m	242	1	NA
768	8.62	1	m	356	NA	NA
769	8.64	1	m	255	1	NA
770	8.65	NA	m	NA	1	NA
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774	8.70	1	m	NA	1	NA
775	8.70	1	m	296	1	NA
776	8.71	1	m	NA	1	NA
777	8.75	1	m	207	NA	NA
778	8.79	1	m	202	1	NA
779	8.79	1	m	160	1	NA
780	8.81	1	m	NA	1	NA
781	8.84	1	m	254	1	NA
782	8.85	1	m	NA	1	NA
783	8.87	1	m	NA	1	NA
784	8.87	1	m	127	1	NA
785	8.88	1	m	144	NA	NA
786	8.90	1	m	135	NA	NA

787	8.91	1	m	NA	1	NA
788	8.92	1	m	328	1	NA
789	8.94	1	m	225	1	NA
790	8.95	1	m	NA	1	NA
791	8.99	1	m	NA	1	NA
792	9.01	1	m	222	1	NA
793	9.01	1	m	153	1	NA
794	9.06	1	m	NA	1	NA
795	9.06	1	m	301	1	NA
796	9.08	1	m	363	1	NA
797	9.16	1	m	NA	NA	NA
798	9.19	1	m	368	1	NA
799	9.20	1	m	NA	1	NA
800	9.23	1	m	163	NA	NA
801	9.23	1	m	144	1	NA
802	9.25	1	m	152	1	NA
803	9.26	1	m	NA	1	NA
804	9.28	1	m	221	1	NA
805	9.30	1	m	181	1	NA
806	9.32	1	m	256	1	NA
807	9.32	1	m	309	1	NA
808	9.33	1	m	221	1	NA
809	9.38	1	m	NA	1	NA
810	9.40	1	m	386	1	NA
811	9.45	1	m	185	NA	NA
812	9.45	1	m	NA	1	NA
813	9.46	1	m	174	1	NA
814	9.48	1	m	247	NA	NA
815	9.48	1	m	246	NA	NA
816	9.49	1	m	257	1	NA
817	9.49	1	m	187	1	NA
818	9.52	1	m	NA	1	NA
819	9.56	1	m	NA	1	NA
820	9.57	1	m	NA	1	NA
821	9.59	1	m	NA	1	NA
822	9.67	1	m	206	1	NA
823	9.71	1	m	399	NA	NA
824	9.71	1	m	NA	1	NA
825	9.76	1	m	270	1	NA
826	9.77	1	m	212	1	NA
827	9.79	1	m	340	1	NA
828	9.80	1	m	243	NA	NA
829	9.81	1	m	259	1	NA
830	9.82	1	m	304	NA	NA
831	9.82	1	m	NA	2	NA
832	9.86	1	m	341	NA	NA
833	9.87	1	m	156	1	NA

834	9.89	1	m	290	NA	NA
835	9.89	1	m	229	2	NA
836	9.91	1	m	323	NA	NA
837	9.94	1	m	NA	1	NA
838	9.95	1	m	NA	1	NA
839	9.96	1	m	199	1	NA
840	9.97	1	m	242	1	NA
841	9.98	1	m	267	1	NA
842	9.99	1	m	248	1	NA
843	10.01	1	m	421	2	NA
844	10.03	1	m	NA	2	NA
845	10.04	1	m	NA	1	NA
846	10.09	1	m	284	2	NA
847	10.14	1	m	NA	1	NA
848	10.20	1	m	387	NA	NA
849	10.20	1	m	290	1	NA
850	10.23	1	m	158	NA	NA
851	10.27	1	m	NA	1	NA
852	10.27	1	m	190	1	NA
853	10.27	1	m	199	1	NA
854	10.29	1	m	209	1	NA
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856	10.35	1	m	NA	1	NA
857	10.37	1	m	271	1	NA
858	10.37	1	m	186	1	NA
859	10.41	1	m	215	2	NA
860	10.42	1	m	224	NA	NA
861	10.42	1	m	243	1	NA
862	10.44	1	m	199	1	NA
863	10.47	1	m	383	NA	NA
864	10.48	1	m	504	NA	NA
865	10.51	1	m	272	NA	NA
866	10.52	1	m	171	1	NA
867	10.55	1	m	254	NA	NA
868	10.55	1	m	257	1	NA
869	10.55	NA	m	NA	2	NA
870	10.55	1	m	NA	2	NA
871	10.57	1	m	553	3	NA
872	10.60	1	m	338	2	NA
873	10.61	1	m	220	1	NA
874	10.62	1	m	NA	3	NA
875	10.63	1	m	179	1	NA
876	10.64	1	m	399	2	NA
877	10.69	1	m	494	2	NA
878	10.70	1	m	NA	1	NA
879	10.70	1	m	262	1	NA
880	10.73	1	m	259	1	NA

881	10.75	1	m	NA	2	NA
882	10.76	1	m	NA	1	NA
883	10.76	1	m	168	2	NA
884	10.76	1	m	347	2	NA
885	10.78	1	m	122	NA	NA
886	10.78	1	m	187	1	NA
887	10.79	1	m	459	2	NA
888	10.80	1	m	464	1	NA
889	10.87	1	m	187	NA	NA
890	10.87	1	m	229	1	NA
891	10.87	NA	m	NA	3	NA
892	10.94	1	m	149	NA	NA
893	10.95	1	m	412	NA	NA
894	10.96	1	m	NA	3	NA
895	10.97	1	m	349	2	NA
896	11.03	1	m	259	NA	NA
897	11.06	1	m	184	1	NA
898	11.08	1	m	104	NA	NA
899	11.08	1	m	278	1	NA
900	11.09	1	m	439	NA	NA
901	11.12	1	m	95	1	NA
902	11.13	1	m	573	2	NA
903	11.15	1	m	196	1	NA
904	11.16	NA	m	NA	2	NA
905	11.20	1	m	NA	1	NA
906	11.23	2	m	NA	NA	NA
907	11.23	1	m	281	1	NA
908	11.27	1	m	NA	2	NA
909	11.29	1	m	288	NA	NA
910	11.31	1	m	259	1	NA
911	11.39	1	m	249	2	NA
912	11.41	1	m	329	3	NA
913	11.43	1	m	433	NA	NA
914	11.50	1	m	453	NA	NA
915	11.51	1	m	280	1	NA
916	11.53	1	m	NA	3	NA
917	11.54	1	m	488	3	NA
918	11.55	1	m	853	3	NA
919	11.55	2	m	447	4	NA
920	11.57	1	m	228	1	NA
921	11.59	1	m	352	1	NA
922	11.60	1	m	690	3	NA
923	11.63	1	m	308	1	NA
924	11.63	NA	m	NA	2	NA
925	11.69	2	m	777	NA	NA
926	11.70	1	m	402	2	NA
927	11.70	1	m	493	3	NA

928	11.73	1	m	383	3	NA
929	11.78	1	m	419	3	NA
930	11.79	1	m	NA	1	NA
931	11.82	1	m	316	1	NA
932	11.82	1	m	NA	2	NA
933	11.82	1	m	462	3	NA
934	11.82	1	m	359	3	NA
935	11.84	1	m	376	1	NA
936	11.84	1	m	483	2	NA
937	11.84	1	m	615	3	NA
938	11.85	1	m	252	1	NA
939	11.87	1	m	197	2	NA
940	11.88	2	m	NA	2	NA
941	11.88	1	m	322	2	NA
942	11.91	1	m	NA	NA	NA
943	11.91	1	m	NA	3	NA
944	11.91	1	m	354	4	NA
945	11.93	1	m	347	NA	NA
946	11.95	1	m	NA	2	NA
947	11.96	1	m	570	3	NA
948	12.01	2	m	588	NA	NA
949	12.01	2	m	NA	3	NA
950	12.02	1	m	390	2	NA
951	12.04	1	m	762	NA	NA
952	12.05	1	m	495	2	NA
953	12.12	1	m	474	3	NA
954	12.16	2	m	363	NA	NA
955	12.17	1	m	NA	1	NA
956	12.20	2	m	508	4	NA
957	12.21	1	m	NA	2	NA
958	12.23	1	m	442	3	NA
959	12.24	2	m	NA	NA	NA
960	12.32	1	m	NA	1	NA
961	12.32	1	m	177	1	NA
962	12.33	2	m	NA	1	NA
963	12.35	1	m	NA	1	NA
964	12.36	1	m	469	3	NA
965	12.40	1	m	NA	3	NA
966	12.42	2	m	618	5	NA
967	12.45	1	m	378	NA	NA
968	12.48	1	m	475	3	NA
969	12.49	1	m	508	2	NA
970	12.49	1	m	558	3	NA
971	12.53	1	m	NA	2	NA
972	12.54	2	m	322	NA	NA
973	12.56	1	m	193	2	NA
974	12.56	1	m	416	2	NA

975	12.59	2	m	NA	4	NA
976	12.60	2	m	914	5	NA
977	12.63	1	m	360	2	NA
978	12.65	1	m	543	2	NA
979	12.68	1	m	545	3	NA
980	12.71	1	m	522	NA	NA
981	12.73	2	m	615	4	NA
982	12.75	2	m	604	4	NA
983	12.80	1	m	411	4	NA
984	12.81	2	m	701	5	NA
985	12.82	1	m	464	3	NA
986	12.82	1	m	596	4	NA
987	12.83	2	m	769	5	NA
988	12.84	1	m	NA	NA	NA
989	12.84	2	m	591	4	NA
990	12.84	2	m	635	5	NA
991	12.85	2	m	NA	NA	NA
992	12.85	1	m	NA	3	NA
993	12.87	1	m	400	3	NA
994	12.88	2	m	699	5	NA
995	12.90	2	m	NA	4	NA
996	12.92	1	m	201	2	NA
997	12.93	2	m	832	5	NA
998	12.93	2	m	587	5	NA
999	12.95	1	m	258	2	NA
1000	12.99	1	m	NA	4	NA
1001	13.07	1	m	556	4	NA
1002	13.10	1	m	NA	NA	NA
1003	13.10	2	m	NA	5	NA
1004	13.12	2	m	NA	4	NA
1005	13.15	NA	m	NA	2	NA
1006	13.17	2	m	687	5	NA
1007	13.25	2	m	473	NA	NA
1008	13.28	1	m	426	3	NA
1009	13.30	2	m	630	5	NA
1010	13.31	1	m	271	2	NA
1011	13.31	2	m	505	5	NA
1012	13.32	1	m	NA	1	NA
1013	13.32	1	m	NA	4	NA
1014	13.36	1	m	474	2	NA
1015	13.36	1	m	526	5	NA
1016	13.41	2	m	611	5	NA
1017	13.42	2	m	NA	3	NA
1018	13.43	1	m	NA	2	NA
1019	13.54	2	m	689	5	NA
1020	13.54	2	m	434	5	NA
1021	13.56	1	m	504	2	NA

1022	13.58	2	m	565	4	NA
1023	13.61	2	m	526	4	NA
1024	13.64	1	m	NA	3	NA
1025	13.65	1	m	522	4	NA
1026	13.67	1	m	NA	3	NA
1027	13.69	2	m	579	5	NA
1028	13.69	2	m	722	5	NA
1029	13.71	2	m	830	5	NA
1030	13.74	1	m	321	4	NA
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1032	13.75	1	m	NA	4	NA
1033	13.75	1	m	651	5	NA
1034	13.81	1	m	486	4	NA
1035	13.82	2	m	535	NA	NA
1036	13.82	1	m	502	4	NA
1037	13.86	1	m	NA	2	NA
1038	13.88	1	m	244	2	NA
1039	13.88	1	m	442	3	NA
1040	13.89	2	m	NA	5	NA
1041	13.91	2	m	475	5	NA
1042	13.94	2	m	648	5	NA
1043	14.01	2	m	NA	4	NA
1044	14.02	1	m	502	4	NA
1045	14.03	1	m	NA	3	NA
1046	14.06	2	m	420	NA	NA
1047	14.09	2	m	439	NA	NA
1048	14.12	2	m	622	5	NA
1049	14.15	2	m	351	4	NA
1050	14.17	2	m	NA	4	NA
1051	14.19	2	m	371	4	NA
1052	14.22	2	m	490	5	NA
1053	14.23	2	m	529	5	NA
1054	14.31	1	m	NA	3	NA
1055	14.39	2	m	374	NA	NA
1056	14.40	2	m	639	5	NA
1057	14.43	2	m	609	5	NA
1058	14.44	2	m	639	NA	NA
1059	14.46	2	m	NA	4	NA
1060	14.47	2	m	631	4	NA
1061	14.48	2	m	609	NA	NA
1062	14.52	2	m	453	4	NA
1063	14.54	2	m	621	NA	NA
1064	14.56	2	m	NA	4	NA
1065	14.59	2	m	504	5	NA
1066	14.60	2	m	439	5	NA
1067	14.69	2	m	576	4	NA
1068	14.70	2	m	NA	4	NA

1069	14.70	1	m	399	4	NA
1070	14.72	2	m	NA	4	NA
1071	14.76	2	m	296	NA	NA
1072	14.76	2	m	NA	5	NA
1073	14.80	2	m	625	NA	NA
1074	14.81	2	m	527	5	NA
1075	14.84	2	m	430	NA	NA
1076	14.84	2	m	436	5	NA
1077	14.88	2	m	NA	3	NA
1078	14.90	2	m	359	NA	NA
1079	14.93	2	m	842	NA	NA
1080	14.93	1	m	491	4	NA
1081	14.96	2	m	478	NA	NA
1082	14.97	2	m	193	NA	NA
1083	14.97	2	m	NA	5	NA
1084	15.01	2	m	667	NA	NA
1085	15.07	2	m	374	NA	NA
1086	15.07	2	m	716	5	NA
1087	15.07	2	m	527	5	NA
1088	15.09	2	m	637	5	NA
1089	15.10	2	m	655	5	NA
1090	15.15	2	m	457	5	NA
1091	15.17	2	m	NA	5	NA
1092	15.18	2	m	493	5	NA
1093	15.26	2	m	728	5	NA
1094	15.37	2	m	281	5	NA
1095	15.38	2	m	485	NA	NA
1096	15.41	2	m	443	5	NA
1097	15.44	2	m	722	5	NA
1098	15.49	2	m	370	NA	NA
1099	15.53	2	m	737	NA	NA
1100	15.55	2	m	514	5	NA
1101	15.56	2	m	574	NA	NA
1102	15.60	2	m	549	5	NA
1103	15.70	2	m	704	NA	NA
1104	15.72	2	m	558	5	NA
1105	15.73	2	m	733	5	NA
1106	15.79	2	m	821	NA	NA
1107	15.81	2	m	NA	4	NA
1108	15.81	2	m	720	5	NA
1109	15.84	2	m	448	NA	NA
1110	15.86	2	m	326	NA	NA
1111	15.86	2	m	NA	3	NA
1112	15.88	2	m	497	NA	NA
1113	15.89	2	m	492	5	NA
1114	16.00	2	m	425	5	NA
1115	16.02	2	m	NA	5	NA

1116	16.02	2	m	NA	5	NA
1117	16.03	2	m	438	5	NA
1118	16.03	2	m	894	5	NA
1119	16.05	2	m	330	NA	NA
1120	16.13	2	m	547	5	NA
1121	16.14	2	m	NA	4	NA
1122	16.21	2	m	528	5	NA
1123	16.24	NA	f	506	5	20
1124	16.24	2	m	526	5	NA
1125	16.25	2	m	570	5	NA
1126	16.25	2	m	524	5	NA
1127	16.27	2	m	478	4	NA
1128	16.34	2	m	352	NA	NA
1129	16.36	2	m	608	5	NA
1130	16.38	2	m	441	5	NA
1131	16.38	2	m	395	5	NA
1132	16.40	2	m	514	5	NA
1133	16.41	2	m	535	5	NA
1134	16.44	2	m	741	5	NA
1135	16.44	2	m	375	5	NA
1136	16.48	2	m	524	5	NA
1137	16.48	2	m	234	5	NA
1138	16.49	2	m	374	5	NA
1139	16.50	2	m	465	4	NA
1140	16.50	2	m	474	5	NA
1141	16.53	2	m	530	5	NA
1142	16.57	2	m	452	5	NA
1143	16.58	2	m	240	NA	NA
1144	16.58	2	m	402	5	NA
1145	16.62	2	m	283	5	NA
1146	16.62	2	m	552	5	NA
1147	16.64	2	m	430	5	NA
1148	16.64	2	m	670	5	NA
1149	16.65	2	m	490	5	NA
1150	16.66	2	m	255	5	NA
1151	16.67	2	m	552	5	NA
1152	16.68	2	m	723	5	NA
1153	16.71	2	m	535	5	NA
1154	16.74	2	m	609	NA	NA
1155	16.79	2	m	510	5	NA
1156	16.79	2	m	313	5	NA
1157	16.84	2	m	582	NA	NA
1158	16.84	2	m	398	5	NA
1159	16.87	2	m	364	5	NA
1160	16.89	2	m	NA	5	NA
1161	16.93	2	m	468	5	NA
1162	16.97	2	m	348	5	NA

1163	16.97	2	m	435	5	NA
1164	16.97	2	m	345	5	NA
1165	16.97	2	m	595	5	NA
1166	16.99	2	m	363	NA	NA
1167	17.01	2	m	397	5	NA
1168	17.02	2	m	574	5	NA
1169	17.03	2	m	362	5	NA
1170	17.09	2	m	344	5	NA
1171	17.13	2	m	385	NA	NA
1172	17.13	2	m	560	5	NA
1173	17.13	2	m	372	5	NA
1174	17.14	2	m	497	5	NA
1175	17.15	2	m	366	5	NA
1176	17.17	2	m	NA	5	NA
1177	17.17	2	m	452	5	NA
1178	17.17	2	m	380	5	NA
1179	17.17	2	m	442	5	NA
1180	17.20	2	m	592	5	NA
1181	17.21	2	m	415	5	NA
1182	17.22	2	m	478	5	NA
1183	17.22	2	m	488	5	NA
1184	17.23	2	m	798	5	NA
1185	17.26	2	m	NA	5	NA
1186	17.30	2	m	346	5	NA
1187	17.30	2	m	416	5	NA
1188	17.36	2	m	414	5	NA
1189	17.36	2	m	NA	5	NA
1190	17.37	2	m	404	5	NA
1191	17.38	2	m	595	4	NA
1192	17.39	2	m	445	5	NA
1193	17.39	2	m	498	5	NA
1194	17.40	2	m	294	5	NA
1195	17.42	2	m	535	5	NA
1196	17.45	2	m	NA	5	NA
1197	17.46	2	m	556	5	NA
1198	17.48	2	m	339	5	NA
1199	17.49	2	m	560	5	NA
1200	17.50	2	m	496	5	NA
1201	17.50	2	m	392	5	NA
1202	17.50	2	m	428	5	NA
1203	17.51	2	m	491	5	NA
1204	17.58	2	m	553	5	NA
1205	17.58	2	m	578	5	NA
1206	17.62	2	m	464	5	NA
1207	17.63	2	m	262	5	NA
1208	17.64	2	m	406	5	NA
1209	17.65	2	m	404	5	NA

1210	17.66	2	m	256	5	NA
1211	17.71	2	m	394	5	NA
1212	17.83	2	m	363	5	NA
1213	17.89	2	m	247	5	NA
1214	17.94	2	m	461	5	NA
1215	17.94	2	m	290	5	NA
1216	17.97	2	m	463	5	NA
1217	17.98	2	m	477	5	NA
1218	17.99	2	m	446	5	NA
1219	17.99	2	m	425	5	NA
1220	18.00	2	m	443	5	NA
1221	18.01	2	m	387	5	NA
1222	18.03	2	m	445	5	NA
1223	18.05	2	m	398	5	NA
1224	18.08	2	m	488	5	NA
1225	18.09	2	m	NA	5	NA
1226	18.09	2	m	355	5	NA
1227	18.14	2	m	393	5	NA
1228	18.17	2	m	436	5	NA
1229	18.21	2	m	509	5	NA
1230	18.23	2	m	436	5	NA
1231	18.24	2	m	472	5	NA
1232	18.26	2	m	324	5	NA
1233	18.28	2	m	259	5	NA
1234	18.32	2	m	430	5	NA
1235	18.33	2	m	483	5	NA
1236	18.39	2	m	399	5	NA
1237	18.40	2	m	431	5	NA
1238	18.41	2	m	494	5	NA
1239	18.44	2	m	NA	5	NA
1240	18.47	2	m	686	5	NA
1241	18.47	2	m	428	5	NA
1242	18.51	2	m	550	5	NA
1243	18.55	2	m	387	5	NA
1244	18.58	2	m	526	5	NA
1245	18.62	2	m	401	5	NA
1246	18.64	2	m	338	5	NA
1247	18.66	2	m	345	5	NA
1248	18.66	2	m	476	5	NA
1249	18.68	2	m	338	5	NA
1250	18.73	2	m	266	5	NA
1251	18.77	2	m	376	5	NA
1252	18.77	2	m	352	5	NA
1253	18.80	2	m	481	5	NA
1254	18.82	2	m	261	5	NA
1255	18.83	2	m	407	5	NA
1256	18.94	2	m	517	5	NA

1257	18.96	2	m	298	5	NA
1258	19.02	2	m	409	5	NA
1259	19.11	2	m	411	5	NA
1260	19.25	2	m	274	5	NA
1261	19.35	2	m	294	5	NA
1262	19.42	2	m	466	5	NA
1263	19.42	2	m	379	5	NA
1264	19.48	2	m	347	5	NA
1265	19.56	2	m	408	5	NA
1266	19.75	2	m	497	5	NA
1267	20.78	2	m	263	NA	NA
1268	20.78	2	m	406	5	NA
1269	21.00	2	m	391	NA	NA
1270	21.33	1	m	NA	NA	NA
1271	22.43	2	m	166	NA	NA
1272	22.80	2	m	358	NA	NA
1273	24.00	2	m	295	NA	NA
1274	25.00	2	m	272	NA	NA
1275	25.00	2	m	352	NA	NA
1276	25.25	2	m	274	NA	NA
1277	25.52	2	m	309	NA	NA
1278	26.00	2	m	238	NA	NA
1279	26.37	2	m	165	5	NA
1280	27.59	2	m	322	NA	NA
1281	28.00	2	m	319	NA	NA
1282	28.00	2	m	271	NA	NA
1283	29.00	2	m	214	NA	NA
1284	29.00	2	m	239	NA	NA
1285	29.00	2	m	313	NA	NA
1286	30.00	2	m	263	NA	NA
1287	30.00	2	m	257	NA	NA
1288	30.00	2	m	235	NA	NA
1289	30.00	2	m	246	NA	NA
1290	30.00	2	m	328	NA	NA
1291	30.00	2	m	292	NA	NA
1292	31.00	2	m	240	NA	NA
1293	31.00	2	m	262	NA	NA
1294	31.00	2	m	277	NA	NA
1295	31.00	2	m	330	NA	NA
1296	32.24	2	m	NA	NA	NA
1297	34.17	2	m	105	NA	NA
1298	34.54	2	m	167	5	NA
1299	34.94	2	m	314	5	NA
1300	34.97	2	m	273	NA	NA
1301	35.16	2	m	232	NA	NA
1302	35.25	2	m	158	NA	NA
1303	35.50	2	m	159	NA	NA

```
1304 36.00       2    m  174     NA      NA
1305 36.00       2    m  215     NA      NA
1306 37.00       2    m  202     NA      NA
1307 37.28       2    m  268     NA      NA
1308 38.00       2    m  245     NA      NA
1309 39.00       2    m  180     NA      NA
1310 40.08       2    m  200     NA      NA
1311 40.91       2    m  220     NA      NA
1312 41.00       2    m  233     NA      NA
1313 41.43       2    m  206     NA      NA
1314 41.91       2    m  331      5      NA
1315 42.00       2    m  169     NA      NA
1316 42.69       2    m  130     NA      NA
1317 43.10       2    m  262     NA      NA
1318 43.33       2    m  100      5      NA
1319 43.80       2    m  249     NA      NA
1320 44.62       2    m  170      5      NA
1321 45.22       2    m  156     NA      NA
1322 45.28       2    m  251     NA      NA
1323 45.41       2    m  220     NA      NA
1324 47.00       2    m  174     NA      NA
1325 47.37       2    m  144      5      NA
1326 48.01       2    m  154      5      NA
1327 48.34       2    m   NA     NA      NA
1328 49.46       2    m  140     NA      NA
1329 51.07       2    m  187      5      NA
1330 52.00       2    m  140     NA      NA
1331 53.18       2    m  252     NA      NA
1332 54.00       2    m  124     NA      NA
1333 54.00       2    m  187     NA      NA
1334 58.95       2    m  218      5      NA
1335 60.99       2    m  226      5      NA
1336 62.73       2    m   NA     NA      NA
1337 65.00       2    m  106     NA      NA
1338 67.88       2    m  217     NA      NA
1339 75.12       2    m  135     NA      NA
> a<-transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose))
Error: unexpected symbol in "a<-
transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose"
> a<-transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose))
Error: unexpected symbol in "a<-
transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose"
> attach(thuesen)
> a<-transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose))
Error: unexpected symbol in "a<-
transform(thuesen,log.gluc=log(blood.glucose),ll=log(blood.glu cose"
> a<-transform(thuesen,log.gluc=log(blood.glucose))
```

```
> a
   blood.glucose short.velocity log.gluc
1           15.3           1.76 2.727853
2           10.8           1.34 2.379546
3            8.1           1.27 2.091864
4           19.5           1.47 2.970414
5            7.2           1.27 1.974081
6            5.3           1.49 1.667707
7            9.3           1.31 2.230014
8           11.1           1.09 2.406945
9            7.5           1.18 2.014903
10          12.2           1.22 2.501436
11           6.7           1.25 1.902108
12           5.2           1.19 1.648659
13          19.0           1.95 2.944439
14          15.1           1.28 2.714695
15           6.7           1.52 1.902108
16           8.6             NA 2.151762
17           4.2           1.12 1.435085
18          10.3           1.37 2.332144
19          12.5           1.19 2.525729
20          16.1           1.05 2.778819
21          13.3           1.32 2.587764
22           4.9           1.03 1.589235
23           8.8           1.12 2.174752
24           9.5           1.70 2.251292
> write.table(a,"~/Desktop/1.txt")
>
> write.table(a,"1.txt")
> getwd()
[1] "/Users/minshu"
> write.table(a,"1.txt")
> write.table(a,"1.txt")
> read.table("http://media.pearsoncmg.com/cmg/pmmg_mml_shared/
mathstatsresources/Akritas/AccidentTypes.txt")
  AccidType Deaths
1  MotorVeh  10547
2    Poison    942
3  Drowning    679
4     Fires    350
5     Falls    258
6  Firearms    205
7     Other   1074
> read.table("~/Desktop/AccidentTypes.txt")
  AccidType Deaths
1  MotorVeh  10547
2    Poison    942
```

```
3  Drowning    679
4     Fires    350
5     Falls    258
6  Firearms    205
7     Other   1074
> read.table("~/Desktop/d_logret_6stocks.txt")
         V1           V2          V3
1      Date       Pfizer       Intel
2  1-Aug-00 -0.001438612  0.049981263
3  1-Sep-00  0.017489274 -0.255619266
4  2-Oct-00 -0.017046116  0.034546736
5  1-Nov-00  0.012012934 -0.072550667
6  1-Dec-00  0.016278701 -0.102497868
7  2-Jan-01 -0.008063083  0.090223122
8  1-Feb-01  -0.00042298  -0.11219423
9  1-Mar-01 -0.040906294 -0.035702138
10 2-Apr-01  0.024190228  0.069994483
11 1-May-01 -0.002978787  -0.05826061
12 1-Jun-01 -0.029781389   0.03463487
13 2-Jul-01  0.012504432  0.008168789
14 1-Aug-01   -0.0306632 -0.027529477
15 4-Sep-01   0.01981548 -0.135934121
16 1-Oct-01  0.019063731  0.077211653
17 1-Nov-01  0.015543895  0.126580684
18 3-Dec-01 -0.036145791 -0.016421934
19 2-Jan-02  0.019356687  0.046876533
20 1-Feb-02 -0.006050198 -0.088680731
21 1-Mar-02 -0.013187975  0.027384065
22 1-Apr-02 -0.038640426 -0.026448085
23 1-May-02 -0.020012226 -0.014900615
24 3-Jun-02   0.00498962 -0.179572434
25 1-Jul-02 -0.034159152   0.01226155
26 1-Aug-02  0.011452067 -0.051537916
27 3-Sep-02 -0.056822917 -0.079127863
28 1-Oct-02  0.039382501   0.09536996
29 1-Nov-02 -0.001620779  0.082000518
30 2-Dec-02 -0.013493147 -0.127500953
31 2-Jan-03 -0.000914625  0.002562217
32 3-Feb-03 -0.007697729  0.042681011
33 3-Mar-03   0.01899439 -0.025156666
34 1-Apr-03 -0.005686915  0.053056729
35 1-May-03  0.005686915  0.054144721
36 2-Jun-03  0.041784483 -0.000213046
37 1-Jul-03 -0.010109859  0.077829522
38 1-Aug-03 -0.045266311   0.06043443
39 2-Sep-03  0.006546894 -0.016587184
40 1-Oct-03  0.017184425  0.078321576
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41	3-Nov-03	0.028255616	0.007861351
42	1-Dec-03	0.022153888	-0.019719492
43	2-Jan-04	0.015748075	-0.021237664
44	2-Feb-04	0.002115176	-0.018679024
45	1-Mar-04	-0.01928823	-0.030753805
46	1-Apr-04	0.008607804	-0.024068646
47	3-May-04	-0.003063819	0.045791862
48	1-Jun-04	-0.013135825	-0.01478726
49	1-Jul-04	-0.030491723	-0.053760665
50	2-Aug-04	0.011876253	-0.058250748
51	1-Sep-04	-0.02833205	-0.02581149
52	1-Oct-04	-0.024200939	0.045251691
53	1-Nov-04	-0.015356644	0.003157084
54	1-Dec-04	-0.01408469	0.019040089
55	3-Jan-05	-0.046516472	-0.017862074
56	1-Feb-05	0.039975516	0.030472706
57	1-Mar-05	-0.000338104	-0.013929818
58	1-Apr-05	0.014633051	0.00525287
59	2-May-05	0.014630589	0.060803225
60	1-Jun-05	-0.005088825	-0.015344193
61	1-Jul-05	-0.017295755	0.018252426
62	1-Aug-05	-0.014040733	-0.02213234
63	1-Sep-05	-0.008682706	-0.01834345
64	3-Oct-05	-0.060303366	-0.020818266
65	1-Nov-05	0.002411637	0.058709923

	V4	V5
1	Citigroup	AmerExp
2	0.044275101	0.017410003
3	-0.033536503	0.012656982
4	-0.011645582	-0.004897625
5	-0.022674793	-0.03827587
6	0.010708311	0
7	0.03990062	-0.066129678
8	-0.055096146	-0.030733152
9	-0.038726816	-0.026380545
10	0.038511978	0.011868735
11	0.019333184	-0.002446047
12	0.013258067	-0.03564197
13	-0.022187219	0.017739418
14	-0.038475736	-0.044368019
15	-0.053479798	-0.098043942
16	0.050835509	0.006689711
17	0.02356606	0.048543672
18	0.022871285	0.035242521
19	-0.025940517	0.002871379
20	-0.020151007	0.007237226
21	0.039197815	0.050683167

22	-0.058277811	0.00137534
23	0.000481346	0.015691714
24	-0.046948457	-0.068454444
25	-0.062746165	-0.01186007
26	0.022330581	0.009740522
27	-0.043102044	-0.063162423
28	0.097624046	0.067951966
29	0.022127194	0.029514688
30	-0.043258124	-0.040869439
31	-0.008110182	0.002151752
32	-0.012956568	-0.024428147
33	0.014203546	-0.004565156
34	0.056727624	0.057647618
35	0.021322255	0.041490099
36	0.018444872	0.001579917
37	0.023189447	0.024870758
38	-0.01419843	0.008620388
39	0.021075597	0.000112293
40	0.020888904	0.018572284
41	-0.003462108	-0.01144524
42	0.013782077	0.024270976
43	0.011862818	0.03132587
44	0.006780909	0.01301928
45	0.012267738	-0.012145545
46	-0.027843588	-0.024949111
47	-0.015263851	0.015239967
48	0.000692103	0.006594513
49	-0.019188415	-0.009580051
50	0.023904782	-0.002001822
51	-0.023595125	0.012265109
52	0.006452318	0.01438828
53	0.003644451	0.021085951
54	0.032148678	0.005093112
55	0.00770161	-0.022982941
56	-0.008076244	0.006507102
57	-0.02606549	-0.02185412
58	0.023245386	0.011111802
59	0.001318328	0.009356124
60	-0.008162243	-0.004091884
61	-0.022110024	0.014246467
62	0.002713407	0.001894712
63	0.016994806	0.016950229
64	0.002497608	-0.003389887
65	0.03829912	0.024183203

	V6	V7
1	Exxon	GenMotor
2	0.010224894	0.093294017

3	0.03798902	-0.032209239
4	0.000330555	-0.019602167
5	-0.00365002	-0.0948916
6	-0.005252049	0.012461253
7	-0.014169243	0.022971579
8	-0.014046895	0.000824088
9	-0.000240008	-0.012105099
10	0.038897488	0.024082196
11	0.002844256	0.020148775
12	-0.006813464	0.053440295
13	-0.019481402	-0.005100405
14	-0.01460743	-0.061635162
15	-0.008224146	-0.105946472
16	0.00061005	-0.016274333
17	-0.020726234	0.08521096
18	0.021578866	-0.009657415
19	-0.002807817	0.022139216
20	0.026948074	0.01967222
21	0.025807264	0.057331233
22	-0.037828005	0.025768635
23	-0.000118352	-0.010495544
24	0.010640133	-0.065487824
25	-0.0465282	-0.060041503
26	-0.013050696	0.016998701
27	-0.045786933	-0.090010126
28	0.023357105	-0.068058029
29	0.017231827	0.083238291
30	0.001739589	-0.032155007
31	-0.009860009	-0.006417575
32	0.001227785	-0.025617995
33	0.011692992	-0.001942487
34	0.003171011	0.030362391
35	0.01767084	-0.00280191
36	-0.005981586	0.008214181
37	-0.003990877	0.016906014
38	0.028166116	0.046380496
39	-0.01291723	-0.001791893
40	-0.00024981	0.018169063
41	-0.001501884	0.006155458
42	0.054151115	0.096343714
43	-0.00221919	-0.031390331
44	0.01712318	-0.009458693
45	-0.006030469	-0.007941261
46	0.009863444	0.001620126
47	0.00995531	-0.014176433
48	0.011450989	0.011337234
49	0.018083807	-0.03339934

```
50  0.000773627 -0.013614662
51  0.020475586  0.012073829
52  0.007945468 -0.042109935
53  0.019898881  0.006031965
54  8.64354E-05  0.016341604
55  0.002842759 -0.036824626
56  0.090927282  -0.00798521
57 -0.026194026 -0.083992068
58 -0.019130346 -0.042013994
59 -0.004194614  0.079608491
60  0.009725145   0.03275369
61  0.009586797  0.034619924
62  0.010547196  -0.02599387
63  0.025608232 -0.047977476
64 -0.053831314 -0.048092196
65  0.031923551 -0.070676054
> a=read.table("~/Desktop/d_logret_6stocks.txt")
> head(a)
        V1          V2          V3
1     Date       Pfizer       Intel
2 1-Aug-00 -0.001438612  0.049981263
3 1-Sep-00  0.017489274 -0.255619266
4 2-Oct-00 -0.017046116  0.034546736
5 1-Nov-00  0.012012934 -0.072550667
6 1-Dec-00  0.016278701 -0.102497868
           V4          V5          V6
1    Citigroup      AmerExp        Exxon
2  0.044275101  0.017410003  0.010224894
3 -0.033536503  0.012656982   0.03798902
4 -0.011645582 -0.004897625  0.000330555
5 -0.022674793  -0.03827587  -0.00365002
6  0.010708311            0 -0.005252049
          V7
1     GenMotor
2  0.093294017
3 -0.032209239
4 -0.019602167
5   -0.0948916
6  0.012461253
> a=read.table("~/Desktop/d_logret_6stocks.txt",header=T)
> a
       Date       Pfizer       Intel
1  1-Aug-00 -0.001438612  0.049981263
2  1-Sep-00  0.017489274 -0.255619266
3  2-Oct-00 -0.017046116  0.034546736
4  1-Nov-00  0.012012934 -0.072550667
5  1-Dec-00  0.016278701 -0.102497868
```

6	2-Jan-01	-0.008063083	0.090223122
7	1-Feb-01	-0.000422980	-0.112194230
8	1-Mar-01	-0.040906294	-0.035702138
9	2-Apr-01	0.024190228	0.069994483
10	1-May-01	-0.002978787	-0.058260610
11	1-Jun-01	-0.029781389	0.034634870
12	2-Jul-01	0.012504432	0.008168789
13	1-Aug-01	-0.030663200	-0.027529477
14	4-Sep-01	0.019815480	-0.135934121
15	1-Oct-01	0.019063731	0.077211653
16	1-Nov-01	0.015543895	0.126580684
17	3-Dec-01	-0.036145791	-0.016421934
18	2-Jan-02	0.019356687	0.046876533
19	1-Feb-02	-0.006050198	-0.088680731
20	1-Mar-02	-0.013187975	0.027384065
21	1-Apr-02	-0.038640426	-0.026448085
22	1-May-02	-0.020012226	-0.014900615
23	3-Jun-02	0.004989620	-0.179572434
24	1-Jul-02	-0.034159152	0.012261550
25	1-Aug-02	0.011452067	-0.051537916
26	3-Sep-02	-0.056822917	-0.079127863
27	1-Oct-02	0.039382501	0.095369960
28	1-Nov-02	-0.001620779	0.082000518
29	2-Dec-02	-0.013493147	-0.127500953
30	2-Jan-03	-0.000914625	0.002562217
31	3-Feb-03	-0.007697729	0.042681011
32	3-Mar-03	0.018994390	-0.025156666
33	1-Apr-03	-0.005686915	0.053056729
34	1-May-03	0.005686915	0.054144721
35	2-Jun-03	0.041784483	-0.000213046
36	1-Jul-03	-0.010109859	0.077829522
37	1-Aug-03	-0.045266311	0.060434430
38	2-Sep-03	0.006546894	-0.016587184
39	1-Oct-03	0.017184425	0.078321576
40	3-Nov-03	0.028255616	0.007861351
41	1-Dec-03	0.022153888	-0.019719492
42	2-Jan-04	0.015748075	-0.021237664
43	2-Feb-04	0.002115176	-0.018679024
44	1-Mar-04	-0.019288230	-0.030753805
45	1-Apr-04	0.008607804	-0.024068646
46	3-May-04	-0.003063819	0.045791862
47	1-Jun-04	-0.013135825	-0.014787260
48	1-Jul-04	-0.030491723	-0.053760665
49	2-Aug-04	0.011876253	-0.058250748
50	1-Sep-04	-0.028332050	-0.025811490
51	1-Oct-04	-0.024200939	0.045251691
52	1-Nov-04	-0.015356644	0.003157084

53	1-Dec-04	-0.014084690	0.019040089
54	3-Jan-05	-0.046516472	-0.017862074
55	1-Feb-05	0.039975516	0.030472706
56	1-Mar-05	-0.000338104	-0.013929818
57	1-Apr-05	0.014633051	0.005252870
58	2-May-05	0.014630589	0.060803225
59	1-Jun-05	-0.005088825	-0.015344193
60	1-Jul-05	-0.017295755	0.018252426
61	1-Aug-05	-0.014040733	-0.022132340
62	1-Sep-05	-0.008682706	-0.018343450
63	3-Oct-05	-0.060303366	-0.020818266
64	1-Nov-05	0.002411637	0.058709923

	Citigroup	AmerExp
1	0.044275101	0.017410003
2	-0.033536503	0.012656982
3	-0.011645582	-0.004897625
4	-0.022674793	-0.038275870
5	0.010708311	0.000000000
6	0.039900620	-0.066129678
7	-0.055096146	-0.030733152
8	-0.038726816	-0.026380545
9	0.038511978	0.011868735
10	0.019333184	-0.002446047
11	0.013258067	-0.035641970
12	-0.022187219	0.017739418
13	-0.038475736	-0.044368019
14	-0.053479798	-0.098043942
15	0.050835509	0.006689711
16	0.023566060	0.048543672
17	0.022871285	0.035242521
18	-0.025940517	0.002871379
19	-0.020151007	0.007237226
20	0.039197815	0.050683167
21	-0.058277811	0.001375340
22	0.000481346	0.015691714
23	-0.046948457	-0.068454444
24	-0.062746165	-0.011860070
25	0.022330581	0.009740522
26	-0.043102044	-0.063162423
27	0.097624046	0.067951966
28	0.022127194	0.029514688
29	-0.043258124	-0.040869439
30	-0.008110182	0.002151752
31	-0.012956568	-0.024428147
32	0.014203546	-0.004565156
33	0.056727624	0.057647618
34	0.021322255	0.041490099

35	0.018444872	0.001579917
36	0.023189447	0.024870758
37	-0.014198430	0.008620388
38	0.021075597	0.000112293
39	0.020888904	0.018572284
40	-0.003462108	-0.011445240
41	0.013782077	0.024270976
42	0.011862818	0.031325870
43	0.006780909	0.013019280
44	0.012267738	-0.012145545
45	-0.027843588	-0.024949111
46	-0.015263851	0.015239967
47	0.000692103	0.006594513
48	-0.019188415	-0.009580051
49	0.023904782	-0.002001822
50	-0.023595125	0.012265109
51	0.006452318	0.014388280
52	0.003644451	0.021085951
53	0.032148678	0.005093112
54	0.007701610	-0.022982941
55	-0.008076244	0.006507102
56	-0.026065490	-0.021854120
57	0.023245386	0.011111802
58	0.001318328	0.009356124
59	-0.008162243	-0.004091884
60	-0.022110024	0.014246467
61	0.002713407	0.001894712
62	0.016994806	0.016950229
63	0.002497608	-0.003389887
64	0.038299120	0.024183203

	Exxon	GenMotor
1	0.0102248940	0.093294017
2	0.0379890200	-0.032209239
3	0.0003305550	-0.019602167
4	-0.0036500200	-0.094891600
5	-0.0052520490	0.012461253
6	-0.0141692430	0.022971579
7	-0.0140468950	0.000824088
8	-0.0002400080	-0.012105099
9	0.0388974880	0.024082196
10	0.0028442560	0.020148775
11	-0.0068134640	0.053440295
12	-0.0194814020	-0.005100405
13	-0.0146074300	-0.061635162
14	-0.0082241460	-0.105946472
15	0.0006100500	-0.016274333
16	-0.0207262340	0.085210960

17 0.0215788660 -0.009657415
18 -0.0028078170 0.022139216
19 0.0269480740 0.019672220
20 0.0258072640 0.057331233
21 -0.0378280050 0.025768635
22 -0.0001183520 -0.010495544
23 0.0106401330 -0.065487824
24 -0.0465282000 -0.060041503
25 -0.0130506960 0.016998701
26 -0.0457869330 -0.090010126
27 0.0233571050 -0.068058029
28 0.0172318270 0.083238291
29 0.0017395890 -0.032155007
30 -0.0098600090 -0.006417575
31 0.0012277850 -0.025617995
32 0.0116929920 -0.001942487
33 0.0031710110 0.030362391
34 0.0176708400 -0.002801910
35 -0.0059815860 0.008214181
36 -0.0039908770 0.016906014
37 0.0281661160 0.046380496
38 -0.0129172300 -0.001791893
39 -0.0002498100 0.018169063
40 -0.0015018840 0.006155458
41 0.0541511150 0.096343714
42 -0.0022191900 -0.031390331
43 0.0171231800 -0.009458693
44 -0.0060304690 -0.007941261
45 0.0098634440 0.001620126
46 0.0099553100 -0.014176433
47 0.0114509890 0.011337234
48 0.0180838070 -0.033399340
49 0.0007736270 -0.013614662
50 0.0204755860 0.012073829
51 0.0079454680 -0.042109935
52 0.0198988810 0.006031965
53 0.0000864354 0.016341604
54 0.0028427590 -0.036824626
55 0.0909272820 -0.007985210
56 -0.0261940260 -0.083992068
57 -0.0191303460 -0.042013994
58 -0.0041946140 0.079608491
59 0.0097251450 0.032753690
60 0.0095867970 0.034619924
61 0.0105471960 -0.025993870
62 0.0256082320 -0.047977476
63 -0.0538313140 -0.048092196

```
64  0.0319235510 -0.070676054
> head(a)
      Date       Pfizer       Intel
1 1-Aug-00 -0.001438612  0.04998126
2 1-Sep-00  0.017489274 -0.25561927
3 2-Oct-00 -0.017046116  0.03454674
4 1-Nov-00  0.012012934 -0.07255067
5 1-Dec-00  0.016278701 -0.10249787
6 2-Jan-01 -0.008063083  0.09022312
    Citigroup       AmerExp        Exxon
1  0.04427510  0.017410003  0.010224894
2 -0.03353650  0.012656982  0.037989020
3 -0.01164558 -0.004897625  0.000330555
4 -0.02267479 -0.038275870 -0.003650020
5  0.01070831  0.000000000 -0.005252049
6  0.03990062 -0.066129678 -0.014169243
     GenMotor
1  0.09329402
2 -0.03220924
3 -0.01960217
4 -0.09489160
5  0.01246125
6  0.02297158
> data(energy)
>  attach(energy)
> energy
   expend stature
1    9.21   obese
2    7.53    lean
3    7.48    lean
4    8.08    lean
5    8.09    lean
6   10.15    lean
7    8.40    lean
8   10.88    lean
9    6.13    lean
10   7.90    lean
11  11.51   obese
12  12.79   obese
13   7.05    lean
14  11.85   obese
15   9.97   obese
16   7.48    lean
17   8.79   obese
18   9.69   obese
19   9.68   obese
20   7.58    lean
```

```
21   9.19   obese
22   8.11    lean
> expend.lean<-expend[stature=="lean"]
>       expend.obese<-expend[stature=="obese"]
> expend.lean
 [1]  7.53  7.48  8.08  8.09 10.15  8.40
 [7] 10.88  6.13  7.90  7.05  7.48  7.58
[13]  8.11
> expend.obese
[1]  9.21 11.51 12.79 11.85  9.97  8.79
[7]  9.69  9.68  9.19
> par(mfrow=c(2,1))
> hist(expend.lean,breaks=10,xlim=c(5,13),ylim=c(0,4),col="white")
> hist(expend.obese,breaks=10,xlim=c(5,13),ylim=c(0,4),col="grey")
> hist(expend.obese,breaks=10,xlim=c(5,13),ylim=c(0,10),col="grey")
> hist(expend.obese,breaks=10,xlim=c(5,33),ylim=c(0,10),col="grey")
> hist(expend.lean,breaks=10,xlim=c(5,13),ylim=c(0,4),col="white")
> hist(expend.lean,breaks=20,xlim=c(5,13),ylim=c(0,4),col="white")
> expend.lean
 [1]  7.53  7.48  8.08  8.09 10.15  8.40
 [7] 10.88  6.13  7.90  7.05  7.48  7.58
[13]  8.11
> expend.obese
[1]  9.21 11.51 12.79 11.85  9.97  8.79
[7]  9.69  9.68  9.19
> boxplot(expend.lean , expend.obese)
> boxplot(expend~stature)
> par(mfrow=c(1,2))
> boxplot(expend.lean)
> boxplot(expend.obese)
> opar<-par(mfrow=c(2,2),mex=0.8,mar=c(3,3,2,1)+.1)
> stripchart(expend~stature)
> stripchart(expend~stature,method="stack")
> stripchart(expend~stature,method="jitter")
> stripchart(expend~stature,method="stack",jitter=0.03)
> energy
   expend stature
1    9.21   obese
2    7.53    lean
3    7.48    lean
4    8.08    lean
5    8.09    lean
6   10.15    lean
7    8.40    lean
8   10.88    lean
9    6.13    lean
10   7.90    lean
```

```
11  11.51   obese
12  12.79   obese
13   7.05    lean
14  11.85   obese
15   9.97   obese
16   7.48    lean
17   8.79   obese
18   9.69   obese
19   9.68   obese
20   7.58    lean
21   9.19   obese
22   8.11    lean
> opar<-par(mfrow=c(2,2),mex=2.8,mar=c(3,3,2,1)+.1)
> stripchart(expend~stature,method="stack",jitter=0.03)
> opar<-par(mfrow=c(2,2),mex=2.8,mar=c(3,3,2,1)+.1)
> stripchart(expend~stature,method="stack",jitter=0.03)
> opar<-par(mfrow=c(2,2),mex=2.8,mar=c(6,6,3,4)+.1)
> stripchart(expend~stature,method="stack",jitter=0.03)
Error in plot.new() : figure margins too large
> opar<-par(mfrow=c(2,2),mex=2.8,mar=c(1,1,1,1)+.1)
> stripchart(expend~stature,method="stack",jitter=0.03)
>
barplot(prop.table(t(caff.marital)),legend.text=colnames(caff.marital),col=c("white","blue"
,"green","black "))
> prop.table(t(caff.marital))
          marital
consumption   Married Prev.married
   0       0.1676955  0.009259259
   1-150   0.3953189  0.011831276
   151-300 0.1538066  0.009773663
   >300    0.0622428  0.005401235
          marital
consumption     Single
   0       0.05606996
   1-150   0.08410494
   151-300 0.02726337
   >300    0.01723251
> barplot(prop.table(t(caff.marital)),legend.text=colnames(caff.marital))
> barplot(prop.table(t(caff.marital)))
> barplot(prop.table(t(caff.marital)),legend.text=colnames(caff.marital))
>
barplot(prop.table(t(caff.marital)),legend.text=colnames(caff.marital),col=c("white","blue"
,"green","black "))
>
barplot(prop.table(t(caff.marital)),legend.text=colnames(caff.marital),col=c("white","blue"
,"green"))
> dotchart(t(caff.marital))
```

```
> t(caff.marital)
          marital
consumption Married Prev.married Single
   0          652           36    218
   1-150     1537           46    327
   151-300    598           38    106
   >300       242           21     67
> opar<- par (mfrow=c(2,2), mex=0.8, mar=c(1,1,2,1))
> slices<- c("white", "grey80", "grey50", "black") pie(caff.marital["Married",],
main="Married", col=slices) pie(caff.marital["Prev.married",], main="Previously married",
col=slices) pie(caff.marital["Single",], main="Single", col=slices)
Error: unexpected symbol in "slices<- c("white", "grey80", "grey50", "black") pie"
> par(opar)
> opar<- par (mfrow=c(2,2), mex=0.8, mar=c(1,1,2,1))
> slices<- c("white", "grey80", "grey50", "black") ;pie(caff.marital["Married",],
main="Married", col=slices) pie(caff.marital["Prev.married",], main="Previously married",
col=slices) pie(caff.marital["Single",], main="Single", col=slices)
Error: unexpected symbol in "pie(caff.marital["Married",], main="Married", col=slices)
pie"
> par(opar)
> opar<- par (mfrow=c(2,2), mex=0.8, mar=c(1,1,2,1))
> slices<- c("white", "grey80", "grey50", "black") ;pie(caff.marital["Married",],
main="Married", col=slices);pie(caff.marital["Prev.married",], main="Previously married",
col=slices);pie(caff.marital["Single",], main="Single", col=slices)
> par(opar)
>
```