Problema 1

a) La principal ventaja es que se trata de un software libre que permite utilizarse sin costo sin necesidad de cracks y por tanto sin problemas legales al tratarse de alguna organizacion, utiliza menos recursos y posee una mayor riqueza de analisis. Otra de sus ventajas es que al tratarse de un software libre son muchas mas las personas que se encuentran dedicadas a realizar modificaciones en codigo por lo que cualquier nuevo analisis que se requiera estara disponible mucho antes que en algun software de pago. Otra ventaja importante consiste en que el usuario tiene una gran libertad para originar codigos de acuerdo a sus necesidades, permite una generacion inmediata de documentos en PDF y cuenta con complementos que ademas permiten realizar modificaciones en tiempo real junto a otros usuarios sin necesidad de estar en el mismo lugar

b) Version actual: 3.2.2 nombre: Fire Safety Version anterior: 3.2.1 nombre: World-Famous Astronaut Version siguiente: no estaba en la pÃągina (?)

c) CRAN sigue ciclos de un aÃśo para liberar una nueva versiÃşn, la versiÃşn se identifica con 3 nÃžmeros, cada aÃśo cambia el nÃžmero central 3.0.0 2013 3.1.0 2014 3.2.0 2015 3.3.0 para 2016 El Ãžltimo nÃžmero identifica actualizaciones que no son tan grandes, las funcionalidades de la nueva tambiÃl'n se ejecutan en la anterior, no necesariamente ocurre problema.

```
> #Problema 2
> A <- matrix(c(1, 2, 2, 1, 3, 4), nrow=2, ncol=3); A

     [,1] [,2] [,3]
[1,]    1    2    3
[2,]    2    1    4

> B <- matrix(c(1, 2, 3, 0, 1, 2), nrow=3, ncol=2); B

     [,1] [,2]
[1,]    1    0
[2,]    2    1
[3,]    3    2

> C <- matrix(c(3, 4, 2, -1, 1, 1, 3, 5, 3), nrow=3, ncol=3); C

     [,1] [,2] [,3]
[1,]    3   -1    3
[2,]    4    1    5
[3,]    2    1    3

> D <- matrix(c(3, 2, -2, 4), nrow=2, ncol=2); D

     [,1] [,2]
[1,]    3   -2
[2,]    2    4

> E <- matrix(c(2, 0, 3, -4, 1, 2, 5, 4, 1), nrow=3, ncol=3); E
```

```
     [,1] [,2] [,3]
[1,]    2   -4    5
[2,]    0    1    4
[3,]    3    2    1
```

```
> F <- matrix(c(-4, 2, 5, 3), nrow=2, ncol=2); F
```

```
     [,1] [,2]
[1,]   -4    5
[2,]    2    3
```

```
> O <- matrix(c(0), nrow=3, ncol=3); O
```

```
     [,1] [,2] [,3]
[1,]    0    0    0
[2,]    0    0    0
[3,]    0    0    0
```

```
> C+E
```

```
     [,1] [,2] [,3]
[1,]    5   -5    8
[2,]    4    2    9
[3,]    5    3    4
```

```
> E+C
```

```
     [,1] [,2] [,3]
[1,]    5   -5    8
[2,]    4    2    9
[3,]    5    3    4
```

A+B

```
> D-F
```

```
     [,1] [,2]
[1,]    7   -7
[2,]    0    1
```

```
> -3*C+5*O
```

```
     [,1] [,2] [,3]
[1,]   -9    3   -9
[2,]  -12   -3  -15
[3,]   -6   -3   -9
```

```
> 2*C-3*E
```

```
     [,1] [,2] [,3]
[1,]    0   10   -9
[2,]    8   -1   -2
[3,]   -5   -4    3
```

2*B+F

```
> #Problema 3
> A <- matrix(c(2, 3, 4, 3, 2, 1, 4, 2, 6, 3, 5, 4), nrow=3, ncol=4); A

     [,1] [,2] [,3] [,4]
[1,]    2    3    4    3
[2,]    3    2    2    5
[3,]    4    1    6    4

> B <- matrix(c(20, 28, 30, 40, 12, 15, 12, 16, 8, 15, 10, 20), nrow=4, ncol=3); B

     [,1] [,2] [,3]
[1,]   20   12    8
[2,]   28   15   15
[3,]   30   12   10
[4,]   40   16   20

> A%*% B

     [,1] [,2] [,3]
[1,]  364  165  161
[2,]  376  170  174
[3,]  448  199  187

> #Problema 4
> library(XML)
> u= "http://www.jaredlander.com/2012/02/another-kind-of-super-bowl-pool/"
> tabla.fea<- readHTMLTable(u)
> tabla.fea

$`NULL`
               V1      V2        V3
1   Participant 1 Giant A Patriot Q
2   Participant 2 Giant B Patriot R
3   Participant 3 Giant C Patriot S
4   Participant 4 Giant D Patriot T
5   Participant 5 Giant E Patriot U
6   Participant 6 Giant F Patriot V
7   Participant 7 Giant G Patriot W
8   Participant 8 Giant H Patriot X
9   Participant 9 Giant I Patriot Y
10 Participant 10 Giant J Patriot Z
```

```
> #Problema 5
> u= "http://www.jaredlander.com/data/Tomato%20First.csv"
> tabla.fea2 <- read.csv(u)
> tabla.fea2
```

	Round	Tomato	Price	Source	Sweet	Acid	Color
1	1	Simpson SM	3.99	Whole Foods	2.8	2.8	3.7
2	1	Tuttorosso (blue)	2.99	Pioneer	3.3	2.8	3.4
3	1	Tuttorosso (green)	0.99	Pioneer	2.8	2.6	3.3
4	1	La Fede SM DOP	3.99	Shop Rite	2.6	2.8	3.0
5	2	Cento SM DOP	5.49	D Agostino	3.3	3.1	2.9
6	2	Cento Organic	4.99	D Agostino	3.2	2.9	2.9
7	2	La Valle SM	3.99	Shop Rite	2.6	2.8	3.6
8	2	La Valle SM DOP	3.99	Faicos	2.1	2.7	3.1
9	3	Stanislaus Alta Cucina	4.53	Restaurant Depot	3.4	3.3	4.1
10	3	Ciao	NA	Other	2.6	2.9	3.4
11	3	Scotts Backyard SM	0.00	Home Grown	1.6	2.9	3.1
12	3	Di Casa Barone (organic)	12.80	Eataly	1.7	3.6	3.8
13	4	Trader Joes Plum	1.49	Trader Joes	3.4	3.3	4.0
14	4	365 Whole Foods	1.49	Whole Foods	2.8	2.7	3.4
15	4	Muir Glen Organic	3.19	Whole Foods	2.9	2.8	2.7
16	4	Bionature Organic	3.39	Whole Foods	2.4	3.3	3.4

	Texture	Overall	Avg.of.Totals	Total.of.Avg
1	3.4	3.4	16.1	16.1
2	3.0	2.9	15.3	15.3
3	2.8	2.9	14.3	14.3
4	2.3	2.8	13.4	13.4
5	2.8	3.1	14.4	15.2
6	3.1	2.9	15.5	15.1
7	3.4	2.6	14.7	14.9
8	2.4	2.2	12.6	12.5
9	3.2	3.7	17.8	17.7
10	3.3	2.9	15.3	15.2
11	2.4	1.9	11.9	11.9
12	2.3	1.4	12.7	12.7
13	3.6	3.9	17.8	18.2
14	3.1	3.1	14.8	15.2
15	3.2	3.1	14.8	14.7
16	3.2	2.8	15.1	15.2

```
> #Problema 6
> Var1<- tabla.fea2$Tomato
> Var2<- tabla.fea2$Sweet
> Var3<- tabla.fea2$Acid
> Var4<- tabla.fea2$Texture

> #Problema 7
```

```
> library(foreign)
> empresas <- read.spss("empresas.sav", to.data.frame = TRUE)
> empresas

             ID  AGR MIN  MAN CEN  CON  SER  BAN SECSER  TC
1  BÃl'lgica       3.3 0.9 27.6 0.9  8.2 19.1  6.2   26.6 7.2
2  Dinamarca     9.2 0.1 21.8 0.6  8.3 14.6  6.5   32.2 7.1
3  Francia      10.8 0.8 27.5 0.9  8.9 16.8  6.0   22.6 5.7
4  Alemania O    6.7 1.3 35.8 0.9  7.3 14.4  5.0   22.3 6.1
5  Irlanda      23.2 1.0 20.7 1.3  7.5 16.8  2.8   20.8 6.1
6  Italia       15.9 0.6 27.6 0.5 10.0 18.1  1.6   20.1 5.7
7  Luxemburgo    7.7 3.1 30.8 0.8  9.2 18.5  4.6   19.2 6.2
8  Holanda       6.3 0.1 22.5 1.0  9.9 18.0  6.8   28.5 6.8
9  Reino Unido   2.7 1.4 30.2 1.4  6.9 16.9  5.7   28.3 6.4
10 Austria      12.7 1.1 30.2 1.4  9.0 16.8  4.9   16.8 7.0
11 Finlandia    13.0 0.4 25.9 1.3  7.4 14.7  5.5   24.3 7.6
12 Grecia       41.4 0.6 17.6 0.6  8.1 11.5  2.4   11.0 6.7
13 Noruega       9.0 0.5 22.4 0.8  8.6 16.9  4.7   27.6 9.4
14 Portugal     27.8 0.3 24.5 0.6  8.4 13.3  2.7   16.7 5.7
15 EspaÃśa       22.9 0.8 28.5 0.7 11.5  9.7  8.5   11.8 5.5
16 Suecia        6.1 0.4 25.9 0.8  7.2 14.4  6.0   32.4 6.8
17 Suiza         7.7 0.2 37.8 0.8  9.5 17.5  5.3   15.4 5.7
18 TurquÃ■a      66.8 0.7  7.9 0.1  2.8  5.2  1.1   11.9 3.2
19 Bulgaria     23.6 1.9 32.3 0.6  7.9  8.0  0.7   18.2 6.7
20 Checoslovaqu 16.5 2.9 35.5 1.2  8.7  9.2  0.9   17.9 7.0
21 Alemania E    4.2 2.9 41.2 1.3  7.6 11.2  1.2   22.1 8.4
22 HungrÃ■a      21.7 3.1 29.6 1.9  8.2  9.4  0.9   17.2 8.0
23 Polonia      31.1 2.5 25.7 0.9  8.4  7.5  0.9   16.1 6.9
24 RumanÃ■a      34.7 2.1 30.1 0.6  8.7  5.9  1.3   11.7 5.0
25 Rusia        23.7 1.4 25.8 0.6  9.2  6.1  0.5   23.6 9.3
26 Yugoslavia   48.7 1.5 16.8 1.1  4.9  6.4 11.3    5.3 4.0

> AGR<- empresas$AGR; AGR

 [1]  3.3  9.2 10.8  6.7 23.2 15.9  7.7  6.3  2.7 12.7 13.0 41.4  9.0 27.8 22.9
[16]  6.1  7.7 66.8 23.6 16.5  4.2 21.7 31.1 34.7 23.7 48.7

> CEN<- empresas$CEN; CEN

 [1] 0.9 0.6 0.9 0.9 1.3 0.5 0.8 1.0 1.4 1.4 1.3 0.6 0.8 0.6 0.7 0.8 0.8 0.1 0.6
[20] 1.2 1.3 1.9 0.9 0.6 0.6 1.1

> BAN<- empresas$BAN; BAN

 [1]  6.2  6.5  6.0  5.0  2.8  1.6  4.6  6.8  5.7  4.9  5.5  2.4  4.7  2.7  8.5
[16]  6.0  5.3  1.1  0.7  0.9  1.2  0.9  0.9  1.3  0.5 11.3

> TC<- empresas$TC; TC
```

```
 [1] 7.2 7.1 5.7 6.1 6.1 5.7 6.2 6.8 6.4 7.0 7.6 6.7 9.4 5.7 5.5 6.8 5.7 3.2 6.7
[20] 7.0 8.4 8.0 6.9 5.0 9.3 4.0

> summary(AGR)

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   2.70    7.70   14.45   19.13   23.67   66.80

> summary(CEN)

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.1000  0.6000  0.8500  0.9077  1.1750  1.9000

> summary(BAN)

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  0.500   1.225   4.650   4.000   5.925  11.300

> summary(TC)

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  3.200   5.700   6.700   6.546   7.075   9.400

> #Problema 8
> coches <- read.table("coches.csv", header = TRUE, sep = ",")
> coches

    consumo motor  cv peso acel aÃ±o origen cilindr derivada
1        13  5031 130 1168 12.0  70      1       8        0
2        16  5735 165 1231 11.5  70      1       8        0
3        13  5211 150 1145 11.0  70      1       8        0
4        15  4982 150 1144 12.0  70      1       8        0
5        14  4949 140 1149 10.5  70      1       8        0
6        16  7030 198 1447 10.0  70      1       8        0
7        17  7440 220 1451  9.0  70      1       8        0
8        17  7210 215 1437  8.5  70      1       8        0
9        17  7456 225 1475 10.0  70      1       8        0
10       16  6391 190 1283  8.5  70      1       8        0
11       NA  2179 115 1030 17.5  70      2       4        1
12       NA  5735 165 1380 11.5  70      1       8        0
13       NA  5752 153 1344 11.0  70      1       8        0
14       NA  6276 175 1388 10.5  70      1       8        0
15       NA  5899 175 1283 11.0  70      1       8        0
16       16  6276 170 1187 10.0  70      1       8        0
17       17  5572 160 1203  8.0  70      1       8        0
18       NA  4949 140 1117  8.0  70      1       8        0
19       16  6555 150 1253  9.5  70      1       8        0
20       17  7456 225 1028 10.0  70      1       8        0
```

21	10	1852	95	790	15.0	70	3	4	1
22	11	3245	95	944	15.5	70	1	6	1
23	13	3261	97	924	15.5	70	1	6	1
24	11	3277	85	862	16.0	70	1	6	1
25	9	1590	88	710	14.5	70	3	4	1
26	9	1590	46	611	20.5	70	2	4	1
27	9	1803	87	890	17.5	70	2	4	1
28	10	1753	90	810	14.5	70	2	4	1
29	9	1704	95	791	17.5	70	2	4	1
30	9	1983	113	744	12.5	70	2	4	1
31	11	3261	90	882	15.0	70	1	6	1
32	24	5899	215	1538	14.0	70	1	8	0
33	24	5031	200	1458	15.0	70	1	8	0
34	21	5211	210	1460	13.5	70	1	8	0
35	26	66	93	244	8.5	0	NA	NA	NA
36	9	1590	88	710	14.5	71	3	4	1
37	8	2294	90	754	15.5	71	1	4	1
38	9	1852	95	742	14.0	71	3	4	1
39	9	1606	NA	682	19.0	71	1	4	1
40	NA	1590	48	659	20.0	71	2	4	1
41	12	3802	100	878	13.0	71	1	6	1
42	15	3687	105	1146	15.5	71	1	6	1
43	14	4097	100	1109	15.5	71	1	6	1
44	12	4097	88	1100	15.5	71	1	6	1
45	13	3802	100	1096	15.5	71	1	6	1
46	17	5735	165	1403	12.0	71	1	8	0
47	17	6555	175	1488	11.5	71	1	8	0
48	17	5752	153	1384	13.5	71	1	8	0
49	17	5211	150	1365	13.0	71	1	8	0
50	20	6276	180	1651	11.5	71	1	8	0
51	18	6555	170	1582	12.0	71	1	8	0
52	18	6555	175	1713	12.0	71	1	8	0
53	13	4228	110	987	13.5	71	1	6	1
54	11	2294	72	802	19.0	71	1	4	1
55	12	4097	100	1094	15.0	71	1	6	1
56	13	4097	88	1046	14.5	71	1	6	1
57	10	1999	86	740	14.0	71	1	4	1
58	8	1901	90	707	14.0	71	2	4	1
59	8	1295	70	691	19.5	71	2	4	1
60	8	1442	76	688	14.5	71	2	4	1
61	8	1163	65	591	19.0	71	3	4	1
62	7	1180	69	537	18.0	71	3	4	1
63	9	1590	60	611	19.0	71	2	4	1
64	9	1491	70	651	20.5	71	1	4	1
65	10	1852	95	759	15.5	72	3	4	1
66	9	1598	80	708	17.0	72	1	4	1

67	10	1590	54	751	23.5	72	2	4	1
68	12	2294	90	802	19.5	72	1	4	1
69	11	1999	86	742	16.5	72	1	4	1
70	18	5735	165	1424	12.0	72	1	8	0
71	17	6555	175	1461	12.0	72	1	8	0
72	16	5211	150	1378	13.5	72	1	8	0
73	17	5752	153	1376	13.0	72	1	8	0
74	14	4982	150	1224	11.5	72	1	8	0
75	21	7030	208	1544	11.0	72	1	8	0
76	18	5735	155	1500	13.5	72	1	8	0
77	20	5735	160	1485	13.5	72	1	8	0
78	18	6555	190	1474	12.5	72	1	8	0
79	12	1147	97	776	13.5	72	3	3	1
80	16	4982	150	1297	12.5	72	1	8	0
81	18	5031	130	1366	14.0	72	1	8	0
82	18	4949	140	1431	16.0	72	1	8	0
83	17	5211	150	1359	14.0	72	1	8	0
84	13	1983	112	977	14.5	72	2	4	1
85	11	1983	76	837	18.0	72	2	4	1
86	11	1966	87	993	19.5	72	2	4	1
87	9	1573	69	729	18.0	72	2	4	1
88	11	1999	86	798	16.0	72	1	4	1
89	8	1590	92	762	17.0	72	3	4	1
90	10	1966	97	835	14.5	72	3	4	1
91	8	1606	80	721	15.0	72	1	4	1
92	9	1590	88	700	16.5	72	3	4	1
93	18	5735	175	1366	13.0	73	1	8	0
94	17	4982	150	1224	11.5	73	1	8	0
95	18	5735	145	1329	13.0	73	1	8	0
96	17	4949	137	1347	14.5	73	1	8	0
97	16	5211	150	1259	12.5	73	1	8	0
98	20	7030	198	1650	11.5	73	1	8	0
99	18	6555	150	1488	12.0	73	1	8	0
100	18	5752	158	1454	13.0	73	1	8	0
101	17	5211	150	1412	14.5	73	1	8	0
102	18	7210	215	1578	11.0	73	1	8	0
103	20	7456	225	1650	11.0	73	1	8	0
104	18	5899	175	1273	11.0	73	1	8	0
105	13	3687	105	1040	16.5	73	1	6	1
106	15	4097	100	1092	18.0	73	1	6	1
107	13	3802	100	981	16.0	73	1	6	1
108	13	4097	88	1007	16.5	73	1	6	1
109	10	3245	95	968	16.0	73	1	6	1
110	9	1590	46	650	21.0	73	2	4	1
111	21	6555	150	1665	14.0	73	1	8	0
112	20	6555	167	1635	12.5	73	1	8	0

113	18	5899	170	1551	13.0	73	1	8	0
114	20	5735	180	1499	12.5	73	1	8	0
115	13	3802	100	929	15.0	73	1	6	1
116	12	1590	88	759	19.0	73	3	4	1
117	11	2294	72	800	19.5	73	1	4	1
118	11	1770	94	793	16.5	73	3	4	1
119	13	1147	90	708	13.5	73	3	3	1
120	12	1999	85	770	18.5	73	1	4	1
121	11	2540	107	824	14.0	73	1	6	1
122	9	1606	90	755	15.5	73	2	4	1
123	16	5735	145	1360	13.0	73	1	8	0
124	15	6555	230	1426	9.5	73	1	8	0
125	8	1114	49	622	19.5	73	2	4	1
126	10	1901	75	719	15.5	73	2	4	1
127	12	1868	91	860	14.0	73	2	4	1
128	12	1983	112	956	15.5	73	2	4	1
129	16	5211	150	1133	11.0	73	1	8	0
130	10	1983	110	886	14.0	73	2	4	1
131	12	2556	122	935	13.5	73	3	6	1
132	21	5735	180	1221	11.0	73	1	8	0
133	12	3245	95	1034	16.5	74	1	6	1
134	11	3277	NA	958	17.0	74	1	6	1
135	12	3802	100	967	16.0	74	1	6	1
136	16	4097	100	1112	17.0	74	1	6	1
137	8	1295	67	650	19.0	74	3	4	1
138	9	1999	80	817	16.5	74	1	4	1
139	7	1163	65	612	21.0	74	3	4	1
140	9	2294	75	847	17.0	74	1	4	1
141	15	4097	100	1260	17.0	74	1	6	1
142	15	4228	110	1210	18.0	74	1	6	1
143	13	3687	105	1204	16.5	74	1	6	1
144	15	4949	140	1380	14.0	74	1	8	0
145	18	5735	150	1566	14.5	74	1	8	0
146	17	5211	150	1485	13.5	74	1	8	0
147	17	4949	140	1546	16.0	74	1	8	0
148	17	4982	150	1419	15.5	74	1	8	0
149	8	1606	83	739	16.5	74	2	4	1
150	9	1295	67	654	15.5	74	2	4	1
151	9	1590	78	766	14.5	74	2	4	1
152	8	1245	52	549	16.5	74	3	4	1
153	7	1360	61	667	19.0	74	3	4	1
154	8	1475	75	708	14.5	74	1	4	1
155	10	1475	75	702	15.5	74	2	4	1
156	9	1901	75	748	14.0	74	2	4	1
157	10	1966	97	829	15.0	74	3	4	1
158	9	1770	93	797	15.5	74	3	4	1

159	8	1295	67	666	16.0	74	2	4	1
160	12	3687	95	1088	16.0	75	1	6	1
161	13	4097	105	1153	16.0	75	1	6	1
162	16	4097	72	1144	21.0	75	1	6	1
163	16	4097	72	1052	19.5	75	1	6	1
164	15	6555	170	1556	11.5	75	1	8	0
165	16	5735	145	1480	14.0	75	1	8	0
166	15	5211	150	1499	14.5	75	1	8	0
167	17	5752	148	1552	13.5	75	1	8	0
168	14	3785	110	1302	21.0	75	1	6	1
169	15	4097	105	1299	18.5	75	1	6	1
170	16	4228	110	1243	19.0	75	1	6	1
171	13	3687	95	1261	19.0	75	1	6	1
172	11	3785	110	1013	15.0	75	1	6	1
173	12	4293	110	1073	13.5	75	1	8	0
174	18	4949	129	1056	12.0	75	1	8	0
175	8	1590	75	723	16.0	75	3	4	1
176	10	2294	83	879	17.0	75	1	4	1
177	12	3802	100	971	16.0	75	1	6	1
178	10	2294	78	864	18.5	75	1	4	1
179	10	2196	96	900	13.5	75	3	4	1
180	9	1475	71	741	16.5	75	2	4	1
181	10	1950	97	848	17.0	75	3	4	1
182	13	2802	97	994	14.5	75	1	6	1
183	8	1475	70	645	14.0	75	2	4	1
184	12	3802	90	1070	17.0	75	1	6	1
185	10	1885	95	898	15.0	75	2	4	1
186	10	1966	88	985	17.0	75	2	4	1
187	11	1983	98	981	14.5	75	2	4	1
188	9	1983	115	890	13.5	75	2	4	1
189	7	1491	53	598	17.5	75	3	4	1
190	8	1753	86	821	15.5	76	2	4	1
191	9	1901	81	740	16.9	76	2	4	1
192	9	2294	92	857	14.9	76	1	4	1
193	9	1606	79	751	17.7	76	1	4	1
194	9	1655	83	734	15.3	76	2	4	1
195	13	4998	140	1405	13.0	76	1	8	0
196	15	5211	150	1396	13.0	76	1	8	0
197	15	4982	120	1320	13.9	76	1	8	0
198	16	5752	152	1405	12.8	76	1	8	0
199	11	3687	100	1077	15.4	76	1	6	1
200	11	4097	105	1117	14.5	76	1	6	1
201	10	3277	81	1004	17.6	76	1	6	1
202	10	3802	90	1028	17.6	76	1	6	1
203	8	1393	52	678	22.2	76	1	4	1
204	10	1606	60	721	22.1	76	1	4	1

205	8	1475	70	645	14.2	76	2	4	1
206	7	1491	53	598	17.4	76	3	4	1
207	12	3687	100	1217	17.7	76	1	6	1
208	13	4097	78	1191	21.0	76	1	6	1
209	13	4097	110	1215	16.2	76	1	6	1
210	13	4228	95	1064	17.8	76	1	6	1
211	8	1590	71	608	12.2	76	2	4	1
212	7	1393	70	663	17.0	76	3	4	1
213	8	1590	75	718	16.4	76	3	4	1
214	9	2294	72	855	13.6	76	1	4	1
215	12	2130	102	1050	15.7	76	2	4	1
216	18	5211	150	1313	13.2	76	1	8	0
217	12	1966	88	1090	21.9	76	2	4	1
218	12	2556	108	976	15.5	76	3	6	1
219	14	2753	120	1273	16.7	76	2	6	1
220	14	5735	180	1460	12.1	76	1	8	0
221	18	5735	145	1351	12.0	76	1	8	0
222	18	4949	130	1290	15.0	76	1	8	0
223	18	5211	150	1251	14.0	76	1	8	0
224	7	1606	68	681	18.5	77	3	4	1
225	8	1819	80	718	14.8	77	1	4	1
226	7	1295	58	608	18.6	77	2	4	1
227	9	1999	96	766	15.5	77	1	4	1
228	7	1393	70	648	16.8	77	3	4	1
229	13	4998	145	1293	12.5	77	1	8	0
230	14	4261	110	1353	19.0	77	1	8	0
231	15	5211	145	1380	13.7	77	1	8	0
232	16	4949	130	1431	14.9	77	1	8	0
233	13	4097	110	1173	16.4	77	1	6	1
234	12	3785	105	1141	16.9	77	1	6	1
235	12	3687	100	1210	17.7	77	1	6	1
236	13	4097	98	1175	19.0	77	1	6	1
237	15	6555	180	1406	11.1	77	1	8	0
238	15	5735	170	1388	11.4	77	1	8	0
239	15	6555	190	1441	12.2	77	1	8	0
240	15	5752	149	1445	14.5	77	1	8	0
241	8	1590	78	646	14.5	77	2	4	1
242	10	2474	88	913	16.0	77	1	4	1
243	9	1590	75	755	18.2	77	3	4	1
244	9	2294	89	918	15.8	77	1	4	1
245	8	1606	63	683	17.0	77	1	4	1
246	7	1606	83	691	15.9	77	1	4	1
247	8	1590	67	661	16.4	77	3	4	1
248	8	1590	78	730	14.1	77	2	4	1
249	11	2393	97	938	14.5	77	3	6	1
250	11	1983	110	866	12.8	77	2	4	1

251	11	1311	110	906	13.5	77	3	3	NA
252	5	1475	48	661	21.5	78	2	4	1
253	7	1606	66	600	14.4	78	1	4	1
254	7	1278	52	661	19.4	78	3	4	1
255	6	1393	70	690	18.6	78	3	4	1
256	7	1491	60	600	16.4	78	3	4	1
257	12	4261	110	1121	15.5	78	1	8	0
258	12	5211	140	1245	13.2	78	1	8	0
259	12	4949	139	1190	12.8	78	1	8	0
260	12	3785	105	1178	19.2	78	1	6	1
261	12	3277	95	1051	18.2	78	1	6	1
262	12	3277	85	988	15.8	78	1	6	1
263	9	2294	88	906	15.4	78	1	4	1
264	12	3687	100	1143	17.2	78	1	6	1
265	12	3802	90	1070	17.2	78	1	6	1
266	11	3785	105	1126	15.8	78	1	6	1
267	11	3277	85	1023	16.7	78	1	6	1
268	13	3687	110	1206	18.7	78	1	6	1
269	13	4228	120	1136	15.1	78	1	6	1
270	12	4998	145	1141	13.2	78	1	8	0
271	13	3785	165	1148	13.4	78	1	6	1
272	13	4949	139	1068	11.2	78	1	8	0
273	13	5211	140	1360	13.7	78	1	8	0
274	8	1606	68	718	16.5	78	1	4	1
275	9	2196	95	853	14.2	78	3	4	1
276	9	1950	97	766	14.7	78	3	4	1
277	8	1721	75	743	14.5	78	1	4	1
278	11	2196	95	838	14.8	78	3	4	1
279	10	2556	105	915	16.7	78	1	4	1
280	10	2474	85	951	17.6	78	1	4	1
281	10	1950	97	801	14.9	78	3	4	1
282	12	2147	103	943	15.9	78	2	5	1
283	14	2671	125	1046	13.6	78	2	6	1
284	11	1983	115	931	15.7	78	2	4	1
285	15	2671	133	1136	15.8	78	2	6	1
286	7	1458	71	663	14.9	78	2	4	1
287	8	1606	68	711	16.6	78	3	4	1
288	11	3785	115	1081	15.4	79	1	6	1
289	12	3277	85	996	18.2	79	1	6	1
290	11	2294	88	963	17.3	79	1	4	1
291	12	3802	90	1088	18.2	79	1	6	1
292	11	3687	110	1120	16.6	79	1	6	1
293	14	4998	130	1280	15.4	79	1	8	0
294	13	4949	129	1241	13.4	79	1	8	0
295	14	5752	138	1318	13.2	79	1	8	0
296	13	5211	135	1276	15.2	79	1	8	0

297	14	5735	155	1453	14.9	79	1	8	0
298	15	5752	142	1351	14.3	79	1	8	0
299	12	4375	125	1201	15.0	79	1	8	0
300	13	5899	150	1313	13.0	79	1	8	0
301	7	1458	71	641	14.0	79	2	4	1
302	7	1409	65	658	15.2	79	3	4	1
303	7	1606	80	638	14.4	79	1	4	1
304	9	1983	80	890	15.0	79	1	4	1
305	9	2999	77	1176	20.1	79	2	5	1
306	10	5735	125	1300	17.4	79	1	8	0
307	9	2311	71	1063	24.8	79	2	4	1
308	10	4261	90	1140	22.2	79	1	8	0
309	7	1721	70	733	13.2	79	1	4	1
310	7	1721	70	716	14.9	79	1	4	1
311	7	1393	65	673	19.2	79	3	4	1
312	6	1491	69	710	14.7	79	2	4	1
313	8	2474	90	890	16.0	79	1	4	1
314	8	2835	115	865	11.3	79	1	6	1
315	9	2835	115	900	12.9	79	1	6	1
316	7	2474	90	852	13.2	79	1	4	1
317	6	1606	76	714	14.7	80	2	4	1
318	6	1458	60	656	18.8	80	3	4	1
319	7	1606	70	706	15.5	80	1	4	1
320	6	1409	65	673	16.4	80	3	4	1
321	8	2474	90	892	16.5	80	1	4	1
322	9	2294	88	956	18.1	80	1	4	1
323	10	2474	90	1001	20.1	80	1	4	1
324	12	3687	90	1127	18.7	80	1	6	1
325	7	1590	78	729	15.8	80	2	4	1
326	8	2196	90	903	15.5	80	3	4	1
327	8	1966	75	847	17.5	80	3	4	1
328	6	1950	92	811	15.0	80	3	4	1
329	7	1770	75	755	15.2	80	3	4	1
330	5	1409	65	703	17.9	80	3	4	1
331	8	2556	105	933	14.4	80	1	4	1
332	6	1393	65	703	19.2	80	3	4	1
333	5	1475	48	695	21.7	80	2	4	1
334	5	1475	48	778	23.7	80	2	4	1
335	6	1983	67	983	19.9	80	2	5	1
336	8	2393	67	1083	21.8	80	2	4	1
337	5	1491	67	616	13.8	80	3	4	1
338	6	1393	NA	611	17.3	80	2	4	1
339	7	1590	67	715	18.0	80	3	4	1
340	8	1458	62	615	15.3	80	2	4	1
341	7	2753	132	970	11.4	80	3	6	1
342	10	1147	100	806	12.5	80	3	3	1

343	7	1999	88	833	15.1	80	2	4	1
344	10	2294	NA	968	14.3	80	1	4	1
345	7	1753	72	763	17.0	80	3	4	1
346	9	2212	84	830	15.7	81	1	4	1
347	9	2474	84	878	16.4	81	1	4	1
348	9	2556	92	873	14.4	81	1	4	1
349	10	2835	110	908	12.6	81	1	6	1
350	8	2212	84	795	12.9	81	1	4	1
351	6	1295	58	585	16.9	81	3	4	1
352	6	1409	64	625	16.4	81	1	4	1
353	7	1327	60	586	16.1	81	3	4	1
354	7	1590	67	688	17.8	81	3	4	1
355	6	1393	65	658	19.4	81	3	4	1
356	6	1458	62	683	17.3	81	3	4	1
357	7	1491	68	661	16.0	81	3	4	1
358	7	1721	63	738	14.9	81	1	4	1
359	7	1606	65	681	16.2	81	1	4	1
360	8	1606	65	793	20.7	81	1	4	1
361	7	1721	74	730	14.2	81	2	4	1
362	7	1639	NA	773	15.8	81	2	4	1
363	7	1753	75	736	14.4	81	3	4	1
364	7	1770	75	783	16.8	81	3	4	1
365	7	1950	100	871	14.8	81	3	4	1
366	7	1966	74	878	18.3	81	3	4	1
367	8	2311	80	1076	20.4	81	2	4	1
368	NA	1983	110	933	15.4	81	2	4	1
369	8	2376	76	1053	19.6	81	2	6	1
370	9	2753	116	966	12.6	81	3	6	1
371	10	2393	120	976	13.8	81	3	6	1
372	11	3785	110	1138	15.8	81	1	6	1
373	9	5735	105	1241	19.0	81	1	8	0
374	12	3277	88	1020	17.1	81	1	6	1
375	13	3687	85	1155	16.6	81	1	6	1
376	8	1835	88	868	19.6	82	1	4	1
377	9	1835	88	880	18.6	82	1	4	1
378	7	1835	88	798	18.0	82	1	4	1
379	8	1835	85	858	16.2	82	1	4	1
380	8	2212	84	841	16.0	82	1	4	1
381	9	2474	90	911	18.0	82	1	4	1
382	10	2294	92	955	16.4	82	1	4	1
383	10	2474	NA	1011	20.5	82	1	4	1
384	7	1721	74	660	15.3	82	2	4	1
385	6	1491	68	675	18.2	82	3	4	1
386	8	1491	68	656	17.6	82	3	4	1
387	6	1721	63	708	14.7	82	1	4	1
388	7	1606	70	708	17.3	82	1	4	1

```
389       7  1966  88  720 14.5  82      3       4        1
390       7  1753  75  735 14.5  82      3       4        1
391       7  1770  70  748 16.9  82      3       4        1
392       6  1491  67  655 15.0  82      3       4        1
393       7  1491  67  655 15.7  82      3       4        1
394       6  1491  67  665 16.2  82      3       4        1
395       9  2966 110  981 16.4  82      1       6        1
396       6  4293  85 1005 17.0  82      1       6        1
397       9  2556  92  861 14.5  82      1       4        1
398      11  3802 112  945 14.7  82      1       6        1
399       7  2360  96  888 13.9  82      3       4        1
400       7  2212  84  790 13.0  82      1       4        1
401       9  2474  90  983 17.3  82      1       4        1
402       9  2294  86  930 15.6  82      1       4        1
403       5  1590  52  710 24.6  82      2       4        1
404       7  2212  84  765 11.6  82      1       4        1
405       8  1966  79  875 18.6  82      1       4        1
406       8  1950  82  906 19.4  82      1       4        1
```

```
> #Problema 10
> Serie3 <- read.table("serie3.txt", header=T);Serie3
```

```
   Serie3
1    3.66
2    3.99
3    5.02
4    6.44
5    7.51
6    8.21
7    9.26
8    9.48
9   10.21
10  10.78
11  11.57
12  12.55
13  13.86
14  14.34
15  14.77
16  15.88
17  17.10
18  17.91
19  19.31
20  20.62
21  22.13
22  23.04
23  23.93
```

```
24  24.87
25  25.83
26  26.09
27  27.42
28  27.82
29  27.73
30  28.06
31  28.63
32  29.95
33  31.19
34  33.13
35  34.48
36  35.69
37  37.26
38  39.08
39  40.49
40  42.09
41  43.17
42  44.58
43  46.24
44  48.32
45  49.34
46  49.90
47  50.60
48  51.45
49  52.18
50  52.28
51  53.50
52  53.96
53  54.69
54  55.21
55  56.27
56  57.46
57  58.20
58  59.48
59  60.56
```