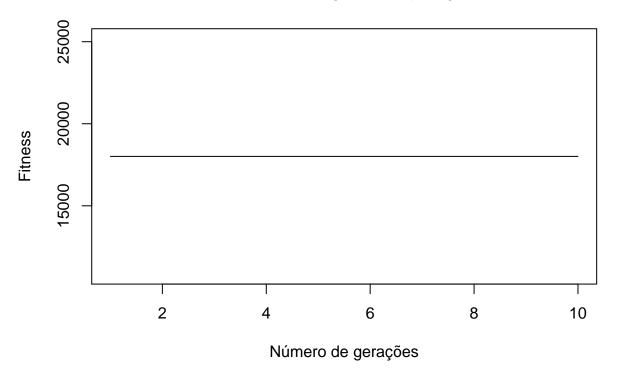
R Notebook

```
##
## Attaching package: 'dplyr'
##
  The following objects are masked from 'package:stats':
##
##
       filter, lag
##
  The following objects are masked from 'package:base':
##
       intersect, setdiff, setequal, union
## [1] "popsize = 10,ngeracoes=10,p_Cross=0.1,p_Mutacao=0.1"
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
## 1
            0 0 0 4 16902
                               1
                                  2
                0
                   0
                      5 17182
                                               5
## 3
       1
          1
             1
                1
                   1
                      1 18011
                               1
                                       3
                                               5
## 4
       1
             1
                0
                   0
                      5 18009
                                       3
                                               5
## 5
                   0
                      3 17691
                               1
                                               5
       1
          1
             1
                0
## 6
       1
          1
             1
                   1
                      3 17660
                               1
                                   2
                                               5
                1
                      3 17704
                                   2
## 7
                                1
                                               5
       1
          1
             1
                1
                   0
                                       3
                   0
                      5 17102
## 8
       1
          0
             0
                0
                               1
                                   2
                                       3
                                               5
       1
         1
             0
                0
                   0 1 17059
                               1
                                   2
                                               5
## 10 1 1
             0 0
                   0 5 17182
                               1
                                               5
## [1] "Geração:"
## [1] 1
##
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
## 1
                                   2
       1
          1
             1
                1
                   1
                      1 18011
                               1
                                       3
## 2
       1
                0
                   0
                      5 18009
                                       3
                                               5
## 3
                      3 17704
                                               5
       1
          1
             1
                   0
                               1
                                       3
                1
## 4
                   0
                     3 17691
## 5
                      3 17660
                                               5
       1
          1
             1
                1
                   1
                               1
## 6
       1
          1
             0
                0
                   0
                      5 17182
                                               5
                                               5
## 7
       1
          0
             0
                0
                   0
                     5 17102
                               1
## 8
       1
          1
             0
                0
                   0
                      1 17059
                                               5
                               2 5
## 9
                   0
                      3 16932
                                           3
       1
          1
             1
                0
                                               4
       1
                   0 4 16902
                                               5
## 10
          1
             0
                0
## [1] "Geração:"
## [1] 2
##
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
## 1
                      1 18011
                               1
                                  2
                                               5
             1
                1
                   1
## 2
                   0
                      5 18009
                                               5
## 3
                   0
                      3 17704
                                               5
       1
             1
                1
                               1
## 4
             1
                0
                   0
                      3 17691
                                               5
## 5
                                               5
       1
          1
             1
                      3 17660
                                1
                                   2
                                       3
                1
                   1
## 6
             0
                0
                   0 5 17182
                                               5
## 7
          0
                                               5
       1
             0
                0
                   0 5 17102
                               1
                                       3
## 8
             0
                0
                   0
                      1 17059
                               1
                                               5
## 9
       1
         1
             1
                0
                   0 3 16932 2 5
                                               4
       1 1
             0 0
                   0
                     4 16902 1 2
                                               5
## [1] "Geração:"
## [1] 3
##
      V1 V2 V3 V4 V5 V6
                           V7 V8 V9 V10 V11 V12
```

```
1 1 1 1 1 18011 1 2
                                         5
      1
        1
           1 0 0 5 18009 1 2
                                  3
                                     4
                                         5
## 3
        1
           1
             1 0 3 17704
                           1 2
                                         5
## 4
             0 0 3 17691
                                         5
        1
           1
                           1 2
                                  3
                                     4
      1
## 5
      1
         1
           1
              1
                 1
                   3 17660
                           1
                              2
                                  3
                                     4
                                         5
## 6
           0
             0
                0 5 17182 1 2
                                  3
                                     4
                                         5
      1
         1
## 7
         0
           0
              0
                0 5 17102
                                         5
      1
                0 1 17059
                           1 2
## 8
      1
        1
           0
             0
                                  3
                                      4
                                         5
## 9
      1 1 1 0 0 3 16932 2 5
                                  1
                                      3
                                         4
## 10 1 1 0 0 0 4 16902 1 2
                                         5
## [1] "Geração:"
## [1] 4
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
     1 1 1 1 1 1 18011 1 2
                                  3
                                         5
## 2
           1 0 0 5 18009
                              2
                                  3
                                         5
      1
         1
                           1
## 3
      1
         1
           1
              1
                0 3 17704
                           1
                              2
                                  3
                                      4
                                         5
## 4
      1
        1
           1
             0 0 3 17691
                              2
                                     4
                                         5
                           1
                                  3
## 5
      1
        1
           1
             1 1 3 17660
                           1 2
                                         5
## 6
      1 1 0 0 0 5 17182
                           1 2
                                  3
                                         5
                                     4
## 7
      1
        0 0 0
                0 5 17102
                           1 2
                                  3
                                     4
                                         5
## 8
      1 1 0 0 0 1 17059 1 2
                                  3
                                     4
                                         5
## 9
      1 1 1
             0 0 3 16932 2 5
                                         4
## 10 1 1 0 0 0 4 16902 1 2
                                  3
                                         5
## [1] "Geração:"
## [1] 5
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 1 18011 1 2
                                  3
                                         5
           1 0 0
                   5 18009
                           1
                              2
                                      4
                                         5
## 2
      1
        1
                                  3
## 3
                   3 17704
                                         5
                0
                           1 2
                                  3
      1
         1
           1
              1
## 4
      1
         1
           1
              0
                0 3 17691
                           1
                              2
                                  3
                                         5
## 5
      1
         1
           1
              1
                 1
                   3 17660
                           1
                              2
                                  3
                                      4
                                         5
## 6
      1
        1
           0
             0 0 5 17182
                           1
                              2
                                  3
                                     4
                                         5
                                         5
## 7
      1
        0 0 0 0 5 17102
                           1 2
                                  3
## 8
     1 1 0 0 0 1 17059
                           1 2
                                         5
                                  3
                                     4
                           2 5
## 9
      1 1 1
             0 0 3 16932
                                     3
                                         4
## 10 1 1 0 0 0 4 16902 1 2
                                         5
## [1] "Geração:"
## [1] 6
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 1 18011 1 2
                                  3
                                         5
        1 1 0 0 5 18009
                           1 2
                                         5
## 3
      1
        1 1
             1 0 3 17704
                           1 2
                                  3
                                      4
                                         5
## 4
                0
                   3 17691
                           1 2
                                     4
      1
        1
           1
             0
                                  3
                                         5
## 5
                           1 2
                                     4
                                         5
      1
         1
           1
              1
                1 3 17660
                                  3
## 6
           0
              0 0 5 17182
                           1 2
                                         5
      1
         1
                                  3
## 7
                0 5 17102
                              2
                                         5
         0
           0
              0
                           1
                                  3
                                      4
      1
           0 0 0 1 17059
                           1 2
                                         5
## 8
      1
        1
                                  3
                                     4
## 9
      1 1 1 0 0 3 16932 2 5
                                      3
                                         4
## 10 1 1 0 0 0 4 16902 1 2
                                         5
## [1] "Geração:"
## [1] 7
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
##
## 1
     1 1 1 1 1 1 18011 1 2
                                  3
                                         5
    1 1 1 0 0 5 18009 1 2
## 2
                                  3
                                     4
                                         5
```

```
1 1 1 1 0 3 17704 1 2
## 3
                                   3
                                           5
## 4
      1
         1
           1
              0 0 3 17691
                            1 2
                                   3
                                       4
                                           5
                 1 3 17660
## 5
      1
         1
            1
                            1
                               2
                                   3
                                       4
                                           5
## 6
              0
                 0 5 17182
                                           5
         1
            0
                            1
                               2
                                   3
                                       4
      1
## 7
      1
         0
            0
              0
                 0 5 17102
                            1
                               2
                                   3
                                       4
                                           5
## 8
         1 0 0
                 0 1 17059
                            1 2
                                   3
                                       4
                                           5
      1
      1
              0
                 0 3 16932 2 5
                                       3
                                           4
         1
           1
                                   1
## 10 1 1 0 0 0 4 16902 1 2
                                   3
                                           5
## [1] "Geração:"
## [1] 8
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
                               2
## 1
         1 1 1 1 1 18011 1
                                   3
                                           5
      1
                 0
                    5 18009
                                       4
                                           5
## 2
      1
         1
           1 0
                            1
                               2
                                   3
## 3
                 0 3 17704
                               2
                                           5
      1
         1
            1
              1
                            1
                                   3
## 4
         1
            1
              0
                 0 3 17691
                            1
                               2
                                   3
                                       4
                                           5
      1
## 5
      1
         1
            1
               1
                 1
                    3 17660
                            1
                               2
                                   3
                                       4
                                           5
## 6
      1
         1
            0
              0
                 0 5 17182
                            1
                               2
                                   3
                                       4
                                           5
                                           5
## 7
      1
         0
           0
              0
                 0 5 17102
                            1
                               2
                                   3
                                       4
## 8
      1
         0 0 0 0 2 17102
                            1 4
                                   5
                                       2
                                           3
## 9
      1
        1 0 0 0 1 17059
                            1
                               2
                                   3
                                       4
                                           5
## 10 1 1 1 0 0 3 16932 2 5
                                   1
                                       3
                                           4
## [1] "Geração:"
## [1] 9
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 1 18011 1 2
                                   3
                                           5
## 2
      1
         1 1 0 0 5 18009
                            1
                               2
                                   3
                                           5
## 3
         1
           1
                 0
                    3 17704
                            1
                               2
                                   3
                                       4
                                           5
      1
              1
## 4
           1
              0
                 0
                    3 17691
                            1
                               2
                                   3
                                       4
                                           5
      1
         1
## 5
                 1 3 17660
                               2
                                       4
                                           5
      1
         1
            1
              1
                            1
                                   3
                                           5
## 6
      1
         1
            0
              0
                 0 5 17182
                            1 2
                                   3
                                       4
                 0 5 17102
## 7
      1
         0
            0
              0
                            1
                               2
                                   3
                                       4
                                           5
## 8
      1
         0
           0 0 0 2 17102
                            1
                               4
                                   5
                                       2
                                           3
                               2
                                           5
## 9
      1 1 0 0 0 1 17059
                            1
                                   3
                                       4
## 10 1 1 1 0 0 3 16932 2 5
                                       3
                                           4
                                   1
## [1] "Geração:"
## [1] 10
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 1 1 18011 1
                               2
                                   3
                                           5
## 2
      1
         1
            1
              0
                 0
                    5 18009
                            1
                               2
                                   3
                                       4
                                           5
              1 0 3 17704
                                       4
                                           5
## 3
      1
         1
           1
                            1
                               2
                                   3
## 4
      1
         1
           1
              0
                 0 3 17691
                            1
                                           5
## 5
      1
         1
           1
                 1 3 17660
                            1
                               2
                                   3
                                       4
                                           5
              1
## 6
         1
            0
              0
                 0
                    5 17182
                            1
                               2
                                       4
                                           5
      1
                                   3
## 7
         0
            0
              0
                 0 5 17102
                               2
                                       4
                                           5
      1
                           1
                                   3
## 8
            0
              0
                 0 2 17102
                                       2
                                           3
      1
         0
                            1
                               4
                                   5
                               2
                                           5
## 9
            0
              0 0 1 17059
                            1
                                   3
                                       4
      1
         1
## 10 1 1 1 0 0 4 17040 1 2
                                       3
                                           4
```



```
## [1] "popsize = 10,ngeracoes=10,p_Cross=0.9,p_Mutacao=0.9"
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
                       3 17102
                                                  5
## 2
                    0
                       2 17890
## 3
                    0
                       4
                                                  5
## 4
                 0
                    0
                       2 17102
                                                  5
                    0
                       5 18073
                                                  5
                 0
                    0
                       2 17019
                                                  5
## 6
              0
                                                  5
##
              1
                 1
                    1
                       5 18101
                                                  5
## 8
                 0
                    0
                       1 17059
                       1 17980
                                                  5
           1
              1
                 1
                    0
                 0
                       5 17102
          0
              0
                    0
## 10
       1
## [1] "Geração:"
  [1] 1
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
## 1
                    1
                       5 18101
                                    2
                                         3
                                                  5
                       5 18073
                                    2
                                                  5
## 2
              1
                 1
                    0
                                         3
## 3
                       1 17980
                                                  5
## 4
                    0
                       2 17965
                                                  5
                 1
                                                  2
## 5
              0
                 0
                    0
                       5
                         17931
                                    2
                                                  5
## 6
                 0
                    0
                       1 17925
## 7
                                                  5
## 8
                 0
                    0
                       2 17890
                                                  5
       1
           1
              1
              1
                 0
                    0
                       4 17834
                                                  5
## 10
              0
                       5 17182
                                                  5
       1
          1
                 0
## [1] "Geração:"
```

```
## [1] 2
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 1 5 18101 1 2
                 0 5 18073
                                           5
## 2
      1
         1
                            1
                                2
                                    3
                                        4
            1
               1
## 3
      1
         1
            1
               0
                 0 5 18009
                             1
                                2
                                    3
                                        4
                                           5
## 4
                 1 2 17993
                            1 2
                                    3
                                        4
                                           5
      1
         1
            1
               1
## 5
               1
                 0 1 17980
                                           5
      1
         1
            1
                                    3
                  0 2 17965
                             1 2
## 6
      1
         1
            1
               1
                                    3
                                        4
                                           5
## 7
      1
         1
            1
               0
                 0 5 17959
                             1
                               5
                                    3
                                        4
                                           2
## 8
            0 0 0 5 17931
                                        4
                                           2
      1
         1
                            1 3
                                    5
## 9
      1 1 1 0 0 1 17925
                            1 2
                                    3
                                        4
                                           5
                 0 4 17907
                            1 2
                                           5
## 10 1 1 1 1
                                    3
                                        4
## [1] "Geração:"
## [1] 3
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550
                            3
                               1
                                    4
                                        2
                                           5
## 2
         1
            1 1 1 5 18101
                                        4
                                           5
      1
                             1
                                2
                                    3
## 3
      1
            1
                 0 5 18073
                                    3
                                           5
## 4
            1 1 1 1 18011
                               2
                                    3
                                        4
                                           5
      1
         1
                             1
## 5
      1
         1
            1
              0
                 0 5 18009
                             1
                                2
                                    3
                                        4
                                           5
## 6
      1
         1
            1
               1 1 2 17993
                            1
                               2
                                    3
                                        4
                                           5
## 7
      1
         1
            1
               1
                 0 1 17980
                             1 2
                                    3
                                           5
              1 1 4 17980
## 8
                             1 2
                                        4
                                           5
      1
         1
            1
                                    3
## 9
      1
         1
            1
              1
                 0 2 17965
                             1 2
                                    3
                                        4
                                           5
## 10 1 1 1 0 0 5 17959 1 5
                                        4
                                           2
                                    3
## [1] "Geração:"
## [1] 4
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 3 1
                                    4
                                           5
## 2
      1
         1
            1
               1
                 1 5 18101
                             1
                               2
                                    3
                                           5
                  0 5 18073
## 3
      1
         1
            1
               1
                             1
                                2
                                    3
                                        4
                                           5
## 4
      1
         1
            1
              1
                 1 1 18011
                             1
                                2
                                    3
                                        4
                                           5
                                           5
## 5
      1
         1
            1
              0 0 5 18009
                             1
                               2
                                    3
                                        4
## 6
              1 1 2 17993
                             1 2
                                           5
         1 1
                                    3
                                        4
      1
## 7
      1
         1
            1
               1
                 0 1 17980
                             1
                                2
                                    3
                                        4
                                           5
## 8
      1
         1
           1 1 1 4 17980
                            1 2
                                    3
                                        4
                                           5
## 9
      1
         1 1 1 0 2 17965 1 2
                                    3
                                        4
                                           5
## 10 1 1 1 0 0 5 17959 1 5
                                    3
                                           2
## [1] "Geração:"
## [1] 5
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
         1 0 0 0 4 18550 3 1
                                    4
                                           5
      1
## 2
                 1 5 18101
                                        4
                                           5
      1
         1
            1
              1
                             1
                                2
                                    3
## 3
                 0 5 18073
                                        4
                                           5
         1
            1
                            1
                               2
                                    3
      1
               1
## 4
                               2
                                           5
      1
         1
            1
               1
                 1 1 18011
                             1
                                    3
                 0 5 18009
                                2
                                           5
## 5
         1
            1
               0
                             1
                                    3
                                        4
      1
            1
                    2 17993
                                           5
## 6
      1
         1
               1
                 1
                             1
                                2
                                    3
                                        4
## 7
         1
                 0 1 17980
                             1 2
                                        4
                                           5
      1
            1
              1
                                    3
## 8
      1
         1 1 1 1 4 17980
                             1 2
                                    3
                                        4
                                           5
                 0 2 17965
                               2
## 9
      1
         1 1
              1
                             1
                                    3
                                        4
                                           5
## 10
      1
         1 1 0
                 0 5 17959
                            1 5
                                        4
                                           2
## [1] "Geração:"
## [1] 6
   V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
```

```
1 1 0 0 0 4 18550 3 1
## 1
                                         5
        1
           1 1 1 5 18101
                           1 2
                                  3
                                     4
                                         5
## 3
           1
             1 0 5 18073
                           1 2
                                         5
## 4
             1 1 1 18011
                                         5
                           1 2
                                  3
                                     4
      1
        1
           1
## 5
      1
         1
           1
             0
                0 5 18009
                           1
                              2
                                  3
                                     4
                                         5
## 6
             1 1 2 17993
                           1 2
                                  3
                                     4
                                         5
      1
         1
           1
              1
                0 1 17980
                                         5
      1
         1
           1
                                  3
                1 4 17980
                              2
## 8
      1
        1
           1
             1
                           1
                                  3
                                      4
                                         5
## 9
      1 1 1 1 0 2 17965 1 2
                                  3
                                     4
                                         5
## 10 1 1 1 0 0 5 17959 1 5
                                         2
## [1] "Geração:"
## [1] 7
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
     1 1 0 0 0 4 18550 3 1
                                         5
## 2
           1 1 1 5 18101
                              2
                                  3
                                      4
                                         5
      1
         1
                           1
## 3
      1
         1
           1
             1
                0 5 18073
                           1
                              2
                                  3
                                      4
                                         5
## 4
      1
        1
           1
             1 1 1 18011
                             2
                                     4
                                         5
                           1
                                  3
## 5
      1
        1
           1
             0 0 5 18009
                                         5
## 6
      1 1 1 0 0 5 18009
                           1 5
                                  3
                                         2
                                     4
## 7
      1
        1
           1
             1
                1 2 17993
                           1
                             2
                                  3
                                     4
                                         5
## 8
      1
        1 1 1 0 1 17980
                          1 2
                                  3
                                     4
                                         5
## 9
      1 1 1 1 1 4 17980 1 2
                                         5
## 10 1 1 1 1 0 2 17965 1 2
                                  3
                                      4
                                         5
## [1] "Geração:"
## [1] 8
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
        1 0 0 0 4 18550 3 1
                                  4
                                         5
      1
                   5 18101
                                      4
                                         5
## 2
      1
         1
           1 1
                1
                           1
                              2
                                  3
## 3
                0 5 18073
                                         5
                           1
                             2
                                  3
      1
         1
           1
              1
## 4
      1
         1
           1
              1
                1 1 18011
                           1 2
                                  3
                                         5
## 5
      1
         1
           1
              0
                0 5 18009
                           1
                              2
                                  3
                                      4
                                         5
## 6
      1
        1
           1
             0 0 5 18009
                           1 5
                                  3
                                     4
                                         2
                           1 2
                                         5
## 7
      1 1 1
             1 1 2 17993
                                  3
## 8
     1 1 1 1 0 1 17980
                           1 2
                                     4
                                         5
                                  3
## 9
      1 1 1 1 4 17980
                           1
                              2
                                  3
                                     4
                                         5
## 10 1 1 1 1 0 2 17965
                           1 2
                                         5
## [1] "Geração:"
## [1] 9
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 3 1
                                  4
        1 1 1 1 5 18101
                                         5
                           1
## 3
        1 1 1 0 5 18073
                           1 2
                                  3
                                      4
                                         5
      1
## 4
                1 1 18011
                                     4
      1
        1
           1
              1
                           1 2
                                  3
                                         5
## 5
             0 0 5 18009
                                     4
                                         5
      1
        1
           1
                           1 2
                                  3
## 6
              0 0 5 18009
                                         2
      1
        1
           1
                           1 5
                                  3
                   2 17993
                              2
## 7
         1
           1
                1
                           1
                                      4
                                         5
      1
              1
                                  3
        1 1 1 0 1 17980 1 2
                                     4
                                         5
## 8
      1
                                  3
## 9
      1 1 1 1 1 4 17980 1 2
                                         5
## 10 1 1 1 1 0 2 17965 1 2
                                         5
## [1] "Geração:"
## [1] 10
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
##
## 1
     1 1 0 0 0 4 18550 3 1
                                  4
                                     2
                                         5
## 2 1 1 1 1 1 5 18101 1 2
```

```
5 18073
                                                 5
                       1 18011
                                                 5
                       5 18009
                                                 5
## 6
                    0
                       5 18009
                                                 2
                                                 5
## 8
                       1 17980
                                                 5
                                                 5
                       2 17965
                    0
## 10
                 1
```

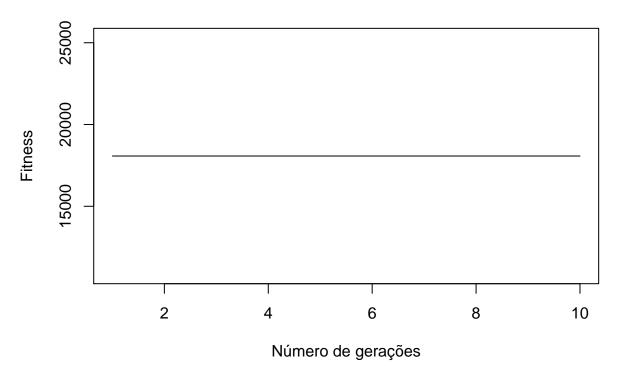


```
## [1] "popsize = 10,ngeracoes=10,p_Cross=0.9,p_Mutacao=0.1"
##
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
                      2 17019
                      2 17890
                                                5
## 2
                0
                   0
                                        3
## 3
             0
                0
                   0
                      1 17102
                                                5
## 4
                      2 17965
                                                5
                1
                   0
                0
                   0
                      5 17102
                                                5
                      3 17006
                                                5
## 6
                0
                   0
                      5 18073
                                                5
                      3 17102
                                                5
                1
                   0
                      2 17965
                                                5
## 10
       1
          0 0
                0
                   0
                      4 17102
## [1] "Geração:"
  [1] 1
                            V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
                      5 18073
## 2
                   0
                      2 17965
```

```
1 1 1 0 0 2 17890 1 2
## 3
                                   3
                                           5
## 4
      1
         0
            0
             0 0 1 17102
                            1 2
                                   3
                                       4
                                           5
## 5
            0
              0
                 0 5 17102
                            1 2
                                   3
                                       4
                                           5
                 0 3 17102
                                           5
## 6
         0
            0
              0
                            1
                               2
                                   3
                                       4
      1
## 7
      1
         0
            0
              0
                 0
                    4 17102
                            1
                               2
                                   3
                                       4
                                           5
## 8
         0
           0
              0
                 0 1 17102 1
                              4
                                   2
                                       3
                                           5
      1
              0
                 0 5 17091 5 1
                                           2
      1
         1
            0
## 10 1 1 0 0 0 2 17019 1 2
                                   3
                                           5
## [1] "Geração:"
## [1] 2
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
         1 1 1 0 5 18073
                            1
                               2
      1
                                   3
                                           5
                 0 5 18009
## 2
      1
         1
           1
              0
                            1
                               2
                                   3
                                       4
                                           5
## 3
                               2
                                           5
      1
         1
            1
              1
                 0 1 17980
                            1
                                   3
## 4
                 0
                    2 17965
                               2
                                   3
                                       4
                                           5
      1
         1
            1
               1
                            1
## 5
      1
         1
            1
              0
                 0
                    2 17890
                            1
                               2
                                   3
                                       4
                                           5
## 6
      1
         0
            0
              0 0 1 17102
                            1
                               2
                                   3
                                       4
                                           5
## 7
      1
         0
           0
              0 0 5 17102
                            1
                               2
                                   3
                                       4
                                           5
## 8
         0 0 0 0 3 17102 1 2
                                   3
                                       4
                                           5
      1
## 9
      1
         0 0 0 0 4 17102 1 2
                                   3
                                       4
                                           5
## 10 1 0 0 0 0 1 17102 1 4
                                   2
                                       3
                                           5
## [1] "Geração:"
## [1] 3
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 0 5 18073 1 2
                                   3
                                           5
## 2
      1
         1 1 0 0 5 18009
                            1
                               2
                                   3
                                           5
## 3
         1
           1
                 0 1 17980
                               2
                                       4
                                           5
      1
              1
                            1
                                   3
## 4
                 0
                    2 17965
                               2
                                   3
                                       4
                                           5
      1
         1
            1
              1
                            1
                 0 2 17890
                            1 2
                                           5
## 5
         1
            1
              0
                                   3
                                       4
      1
## 6
      1
         1
            1
              0
                 0 4 17834
                            1 2
                                   3
                                       4
                                           5
                 0 3 17704
## 7
      1
         1
            1
              1
                            1
                               2
                                   3
                                       4
                                           5
## 8
      1
         0 0 0 0 1 17102
                            1
                               2
                                   3
                                       4
                                           5
                                           5
## 9
      1 0 0 0 0 5 17102 1 2
                                   3
                                       4
## 10 1 0 0 0 0 3 17102 1 2
                                   3
                                       4
                                           5
## [1] "Geração:"
## [1] 4
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 0 5 18073
                            1 2
                                   3
                                       4
                                           5
## 2
      1
         1
           1
              0
                 0 5 18009
                            1
                               2
                                   3
                                       4
                                           5
                                           5
## 3
      1
         1
              1 0 1 17980
                            1 2
                                   3
                                       4
           1
## 4
      1
         1 1 1 0 2 17965
                            1 2
                                           5
                                       4
## 5
         1
           1
              0
                 0 1 17925
                            1 2
                                   3
                                       4
                                           5
      1
## 6
              0
                 0
                    2 17890
                               2
                                       4
      1
         1
           1
                            1
                                   3
                                           5
## 7
                 0 4 17834
                               2
                                       4
                                           5
         1
           1
              0
                            1
                                   3
      1
## 8
                 0 3 17704
                            1 2
                                   3
                                           5
      1
         1
            1
              1
              0 0 3 17691
                               2
                                           5
## 9
        1
                            1
                                   3
                                       4
      1
            1
## 10 1 0 0 0 0 1 17102 1 2
                                           5
## [1] "Geração:"
## [1] 5
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
## 1
        1 1 1 0 5 18073
                            1 2
                                   3
                                       4
                                           5
      1
           1 0 0 5 18009
                            1 2
                                           5
## 2
      1
         1
                                   3
           1 1 0 1 17980
## 3
      1
         1
                            1 2
                                   3
                                       4
                                           5
## 4
      1 1 1 1 0 2 17965 1 2
                                   3
                                       4
                                           5
```

```
## 5
      1 1 1 0 0 1 17925 1 2
                                   3
                                           5
## 6
         1
           1 0 0 2 17890
                            1 2
                                   3
                                       4
                                           5
## 7
         1
           1
                 0 4 17834
                            1 2
                                           5
                 0 3 17704
                                           5
## 8
      1 1 1
                            1 2
                                   3
                                       4
              1
## 9
      1
         1
           1
              0
                 0 3 17691
                            1
                                   3
                                       4
                                           5
## 10 1 0 0 0 0 1 17102 1 2
                                           5
## [1] "Geração:"
## [1] 6
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 0 5 18073 1 2
                                   3
                                           5
      1
         1
            1
              0 0 5 18009
                            1
                                   3
                                           5
## 3
                 0 1 17980
                                           5
         1
           1
                               2
                                   3
                                       4
      1
              1
                            1
                                           5
## 4
      1
         1
            1
              1
                 0
                    2 17965
                            1
                               2
                                   3
                                       4
## 5
                 0 1 17925
                               2
                                           5
      1
         1
            1
               0
                            1
                                   3
## 6
         1
            1
              0
                 0
                    2 17890
                            1
                               2
                                   3
                                       4
                                           5
      1
## 7
      1
         1
            1
              0
                 0 4 17834
                            1
                               2
                                   3
                                       4
                                           5
## 8
      1
         1
           1
                 0 3 17704
                            1 2
                                   3
                                       4
                                           5
              1
## 9
      1 1 1 0 0 3 17691 1 2
                                           5
## 10 1 0 0 0 0 1 17102 1 2
                                           5
## [1] "Geração:"
## [1] 7
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
         1 1 1 0 5 18073
                               2
                                   3
                                           5
      1
                            1
## 2
      1
         1
           1
              0 0 5 18009
                            1
                               2
                                   3
                                       4
                                           5
## 3
              1 0 1 17980
                               2
                                       4
                                           5
      1
         1
           1
                            1
                                   3
## 4
      1
         1
           1 1
                 0 2 17965
                            1 2
                                   3
                                       4
                                           5
## 5
         1
           1
              0
                 0 1 17925
                               2
                                   3
                                       4
                                           5
      1
                            1
## 6
            1
              0
                 0
                    2 17890
                            1
                               2
                                   3
                                       4
                                           5
      1
         1
                            1 2
                                           5
## 7
         1
           1
              0
                 0 4 17834
                                   3
      1
## 8
      1
         1
            1
              1
                 0 3 17704
                            1 2
                                   3
                                           5
## 9
      1
         1
           1
              0 0 3 17691
                            1
                               2
                                   3
                                       4
                                           5
## 10 1 0 0 0 0 1 17102 1 2
                                           5
## [1] "Geração:"
## [1] 8
                         V7 V8 V9 V10 V11 V12
##
     V1 V2 V3 V4 V5 V6
## 1
      1 1 1 1 0 5 18073 1 2
                                   3
                                           5
## 2
              0
                 0 5 18009
                            1 2
                                   3
                                           5
## 3
         1
            1
                 0 1 17980
                            1
                               2
                                   3
                                       4
                                           5
      1
              1
## 4
      1
         1
            1
              1
                 0
                    2 17965
                            1
                               2
                                   3
                                       4
                                           5
              0 0 5 17959
                                           2
## 5
      1
         1
           1
                            5
                              3
                                       4
                                   1
## 6
      1
        1
           1
              0
                 0 1 17925
                            1 2
                                           5
## 7
      1 1 1
              0
                 0
                    2 17890
                            1 2
                                   3
                                       4
                                           5
## 8
              0
                 0 4 17834
                            1
                               2
                                       4
                                           5
      1
        1
           1
                                   3
## 9
                 0 3 17704
                                       4
                                           5
      1 1
           1
              1
                            1 2
                                   3
## 10 1 1 1 0
                 0 3 17691
                                           5
## [1] "Geração:"
## [1] 9
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 0 5 18073
                            1
                               2
                                   3
                                           5
                 0 5 18009
                               2
                                           5
## 2
      1
         1
            1
              0
                            1
                                   3
                                       4
## 3
                 0 1 17980
                            1
                               2
                                   3
                                       4
                                           5
      1
         1
            1
              1
                 0 2 17965
                            1 2
                                           5
## 4
      1
         1
            1
              1
                                   3
## 5
      1
         1
            1
              0 0 5 17959 5 3
                                       4
                                           2
      1 1 1 0 0 1 17925 1 2
## 6
                                   3
                                       4
                                           5
```

```
4 17907
                                                  5
                    0
                        2 17890
                                                  5
              1
                 0
                    0
                       4 17834
                                                  5
       1
          1
  [1]
       "Geração:"
##
##
   [1] 10
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10
## 1
                        5 18073
                                     2
                                          3
##
                 0
                    0
                        5 18009
                                          3
                                                  5
## 3
                    0
                        5 18009
                                                  2
                                                  5
                    0
                        1 17980
                        2 17965
                                                  5
## 5
                     0
##
                    0
                        5
                          17959
                                                  2
                                                  5
## 7
## 8
                 0
                    0
                        1 17925
                                                  2
                                     2
## 9
              1
                 1
                    0
                        4 17907
                                         3
                                                  5
## 10
              1
                 0
                    0
                        2 17890
```



```
## [1] "popsize = 10,ngeracoes=20,p_Cross=0.1,p_Mutacao=0.1"
##
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
## 1
                    0
                       5 17102
                                        3
                                                5
                       5 18073
                                            4
                                                5
##
                1
                    0
                                        3
## 3
                                                5
                       4 17102
                                                5
##
             0
                0
                    0
                       3 17006
## 5
                       1 18011
                                            4
                                                5
                       5 17102
## 6
             0
                0
                    0
```

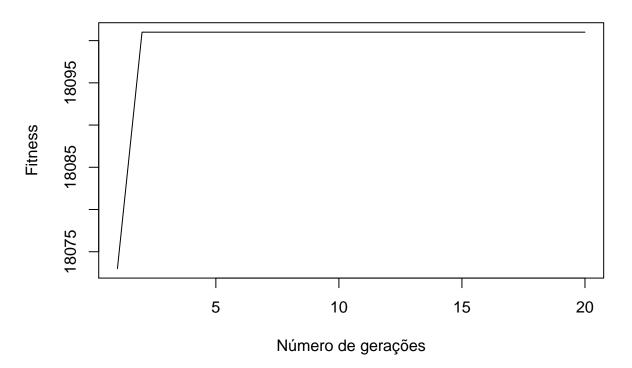
```
1 1 1 1 0 2 17965 1 2
                                   3
                                          5
      1 1 1 1 0 5 18073
                           1 2
                                   3
                                      4
                                          5
      1 0 0 0 0 4 17102
                           1 2
                                      4
                                          5
## 10 1 1 1 0 0 5 18009
                                          5
                            1 2
                                   3
## [1] "Geração:"
## [1] 1
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 0 5 18073 1 2
                                   3
## 2
      1
         1
           1
              1
                 1 1 18011
                            1
                               2
                                   3
                                      4
                                          5
## 3
              0 0 5 18009
                                      4
                                          5
      1
         1
           1
                           1 2
                                   3
## 4
      1
         1
           1
              1 0 2 17965
                           1 2
                                   3
                                      4
                                          5
                                          5
## 5
         0
           0
              0
                 0 5 17102
                              2
                                   3
                                      4
      1
                            1
## 6
      1
         0
           0
              0
                 0 4 17102 1
                              2
                                   3
                                      4
                                          5
## 7
                 0 2 17102 1 3
                                      2
                                          4
      1
         0
           0
              0
                                   5
## 8
           0
              0
                 0 3 17006 1 2
                                   3
                                      4
                                          5
      1
         1
## 9
      1
         1
           0 0 0 1 16908 4 1
                                   3
                                      2
                                          5
## 10 1 1 1 1 0 5 18073 1 2
                                          5
## [1] "Geração:"
## [1] 2
                        V7 V8 V9 V10 V11 V12
##
     V1 V2 V3 V4 V5 V6
## 1
      1
        1 1 1 1 5 18101 1 2
                                   3
                                          5
## 2
           1
                 0 5 18073
                                          5
              1
## 3
                 1 1 18011
                              2
                                      4
                                          5
      1
         1
           1
              1
                            1
                                   3
## 4
      1
         1
           1
              0
                 0
                    5 18009
                            1
                               2
                                   3
                                      4
                                          5
## 5
              1 0 2 17965
                                      4
                                          5
      1
         1
           1
                            1 2
                                   3
## 6
      1
        1
           1 1 0 4 17907
                            1 2
                                   3
                                      4
                                          5
## 7
        1
           1
              0
                 0 3 17691
                           1
                               2
                                   3
                                      4
                                          5
      1
## 8
           0
              0 0 5 17182 1 2
                                   3
                                      4
                                          5
      1
         1
## 9
                                      4
                                          5
      1 0 0 0 0 5 17102 1 2
                                   3
## 10 1 0 0 0 0 4 17102 1 2
                                          5
## [1] "Geração:"
## [1] 3
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
        1 1 1 1 5 18101 1
                              2
                                          5
## 1
                                   3
      1
## 2
      1
         1
           1
              1
                 0 5 18073
                            1
                               2
                                   3
                                      4
                                          5
## 3
         1
              1 1 1 18011
                           1 2
                                   3
                                      4
                                          5
      1
           1
## 4
      1
         1
           1
              0 0 5 18009
                           1 2
                                   3
                                          5
## 5
      1
         1
           1
                1 4 17980
                            1 2
                                   3
                                      4
                                          5
              1
                    2 17965
## 6
      1
         1
           1
              1
                 0
                            1
                               2
                                   3
                                      4
                                          5
                                          5
## 7
      1
        1 1
                0 4 17907
                            1 2
                                   3
                                      4
              1
## 8
      1 1 1 0 0 3 17691
                                          5
## 9
      1 1 0 0 0 5 17182
                            1
                              2
                                   3
                                      4
                                          5
## 10 1 0 0 0 0 5 17102 1 2
                                          5
## [1] "Geração:"
## [1] 4
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
##
        1 1 1 1 5 18101
                           1 2
## 1
      1
                                   3
                                          5
## 2
         1 1 1 0 5 18073
                               2
                                          5
      1
                            1
## 3
      1
         1 1 1 1 18011
                            1
                              2
                                   3
                                      4
                                          5
                               2
                                          5
## 4
      1
         1
           1
              0
                 0 5 18009
                            1
                                   3
                                      4
## 5
                 1 4 17980
                            1
                              2
                                   3
                                      4
                                          5
      1
         1
           1
              1
                 0 2 17965
                           1 2
                                          5
## 6
      1
         1
            1
              1
                                   3
              1 0 4 17907 1 2
## 7
      1
         1
           1
                                   3
                                      4
                                          5
      1 1 1 0 0 3 17691 1 2
## 8
                                      4
                                          5
```

```
1 1 0 0 0 5 17182 1 2
                                    3
## 10 1 0 0 0 0 5 17102 1 2
                                    3
                                            5
## [1] "Geração:"
## [1] 5
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 1 1 1 5 18101 1 2
                                    3
                  0 5 18073
                             1
                                            5
            1
               1
## 3
      1
         1
            1
               1
                  1
                    1 18011
                             1
                                2
                                    3
                                        4
                                            5
## 4
      1
         1
            1
               0
                  0
                     5 18009
                             1
                                2
                                    3
                                        4
                                            5
## 5
                                        4
                                            5
      1
         1
            1
               1
                 1 4 17980
                             1
                                2
                                    3
## 6
      1
         1
            1
               1
                 0 2 17965
                             1
                                2
                                    3
                                        4
                                            5
                  0 4 17907
                                            5
## 7
         1
                                2
                                    3
                                        4
      1
            1
               1
                             1
                     3 17691
                                            5
## 8
      1
         1
            1
               0
                  0
                             1
                                2
                                    3
                                        4
## 9
              0
                 0 5 17182 1 2
                                        4
                                            5
      1
         1
            0
                                    3
## 10 1 0 0 0
                 0 5 17102 1 2
                                            5
## [1] "Geração:"
## [1] 6
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
         1 1 1 1 5 18101 1 2
## 1
      1
                                    3
                                            5
## 2
      1
         1
            1
               1
                  0 5 18073
                             1
                                    3
                                        4
                                            5
## 3
      1
         1
            1
               1
                 1 1 18011
                             1
                                2
                                    3
                                        4
                                            5
## 4
         1
            1
               0
                 0 5 18009
                                            5
## 5
                 1 4 17980
                                2
                                            5
      1
         1
            1
               1
                             1
                                    3
                                        4
## 6
      1
         1
            1
               1
                  0
                     2 17965
                             1
                                2
                                    3
                                        4
                                            5
## 7
                             1 2
                                        4
                                            5
      1
         1
            1
              1
                 0 4 17907
                                    3
## 8
      1 1 1 0 0 3 17691
                             1 2
                                    3
                                        4
                                            5
## 9
      1 1 0 0 0 5 17182
                             1
                                2
                                    3
                                        4
                                            5
## 10 1 0 0 0
                 0 5 17102 1
                                            5
## [1] "Geração:"
## [1] 7
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 1 5 18101
                             1
                                2
                                    3
                                            5
            1 1 0 5 18073
                                            5
## 2
      1
         1
                             1
                                    3
## 3
                 1 1 18011
                                        4
                                            5
      1
         1
            1
               1
                             1
                                2
                                    3
## 4
      1
         1
            1
               0
                  0
                     5 18009
                             1
                                2
                                    3
                                        4
                                            5
## 5
      1
         1
               1 1 4 17980
                             1
                               2
                                    3
                                        4
                                            5
            1
                  0 2 17965
## 6
      1
         1
            1
               1
                             1 2
                                    3
                                            5
## 7
      1
         1
            1
                  0 4 17907
                             1 2
                                    3
                                        4
                                            5
               1
                 0 3 17691
## 8
      1
         1
            1
               0
                             1
                                2
                                    3
                                        4
                                            5
      1 1 0 0 0 5 17182 1 2
                                            5
## 9
                                    3
                                        4
## 10 1 0 0 0 0 5 17102 1 2
                                            5
## [1] "Geração:"
## [1] 8
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
                                2
## 1
      1
         1 1 1 1 5 18101
                             1
                                    3
                                            5
                     5 18073
                                            5
## 2
         1
                  0
                             1
                                2
                                        4
      1
            1
               1
                                    3
                                            5
## 3
      1
         1
            1
               1
                  1
                    1 18011
                             1
                                2
                                    3
                                        4
## 4
         1
                     5 18009
                                2
                                            5
      1
            1
               0
                  0
                             1
                                    3
## 5
      1
         1
            1
               1
                 1 4 17980
                             1
                                2
                                    3
                                        4
                                            5
                     2 17965
                                2
                                            5
## 6
      1
         1
            1
               1
                  0
                             1
                                    3
                                        4
## 7
                  0 4 17907
                             1
                                2
                                    3
                                        4
                                            5
      1
         1
            1
               1
                  0 3 17691
                             1 2
                                            5
## 8
      1
         1
            1
               0
                                    3
## 9
      1
         1
            0
               0 0 5 17182 1 2
                                    3
                                        4
                                            5
         0 0 0 0 5 17102 1 2
## 10 1
                                        4
                                            5
```

```
## [1] "Geração:"
## [1] 9
      V1 V2 V3 V4 V5 V6
##
                          V7 V8 V9 V10 V11 V12
         1 1 1 1 5 18101
## 1
                             1
                                2
                                     3
                                             5
## 2
            1
               1
                  0
                     5 18073
                             1
                                 2
                                     3
                                         4
                                             5
## 3
                  1 1 18011
                                2
                                             5
      1
         1
            1
               1
                             1
                                     3
## 4
               0
                  0
                    5 18009
                                             5
      1
         1
            1
                             1
                     4 17980
                                 2
## 5
      1
         1
            1
               1
                  1
                              1
                                     3
                                         4
                                             5
## 6
      1
         1
            1
               1
                  0
                     2 17965
                              1
                                 2
                                     3
                                         4
                                             5
## 7
                  0 4 17907
                                2
                                         4
                                             5
      1
         1
            1
               1
                             1
                                     3
## 8
      1 1 1
               0 0 3 17691
                              1
                                 2
                                     3
                                             5
            0 0 0 5 17182
                                 2
                                             5
## 9
      1 1
                             1
                                     3
                                         4
## 10 1 0 0 0 0 5 17102 1
                                         4
                                             5
## [1] "Geração:"
## [1] 10
##
      V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 1 1 1 5 18101 1 2
                                     3
                                         4
                                             5
      1
## 2
            1
               1
                  0 5 18073
                                             5
## 3
         1
              1 1 1 18011
                                2
                                         4
                                             5
      1
           1
                             1
                                     3
## 4
      1
         1
            1
               0
                  0 5 18009
                             1
                                2
                                     3
                                         4
                                             5
                  1 4 17980
## 5
      1
         1
            1
               1
                             1
                                2
                                     3
                                         4
                                             5
## 6
      1
         1
            1
               1
                  0 2 17965
                                2
                                             5
## 7
                  0 4 17907
                             1
                                2
                                         4
                                             5
      1
         1
            1
               1
                                     3
## 8
      1
         1
            1
               0
                  0
                     3 17691
                              1
                                 2
                                     3
                                         4
                                             5
## 9
              0 0 5 17182 1 2
                                         4
                                             5
      1 1 0
                                     3
                  0 5 17102
## 10 1 0 0 0
                             1
                                             5
## [1] "Geração:"
## [1] 11
##
                          V7 V8 V9 V10 V11 V12
     V1 V2 V3 V4 V5 V6
      1
         1
            1 1 1 5 18101
                             1
                                2
                                     3
                                             5
                  0 5 18073
## 2
      1
         1
            1
               1
                              1
                                 2
                                     3
                                         4
                                             5
## 3
      1
         1
            1
               1
                  1 1 18011
                              1
                                 2
                                     3
                                         4
                                             5
                                             5
## 4
      1
         1
            1
               0
                  0 5 18009
                              1
                                     3
## 5
               1 1 4 17980
                                 2
                                         4
                                             5
      1
         1
            1
                             1
                                     3
                     2 17965
## 6
      1
         1
            1
               1
                  0
                             1
                                 2
                                     3
                                         4
                                             5
## 7
         1
            1
                  0 4 17907
                             1 2
                                     3
                                         4
                                             5
      1
               1
## 8
      1
         1
            1
               1
                  0 3 17704
                             1 2
                                     3
                                             5
## 9
      1
         1
            1
               0
                  0 3 17691
                             1 2
                                     3
                                         4
                                             5
## 10
      1 1 0 0
                  0 5 17182 1
                                     3
                                         4
                                             5
## [1] "Geração:"
## [1] 12
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 1 1 1 5 18101
                             1 2
      1
                                     3
                                             5
## 2
                    5 18073
                                             5
      1
         1
            1
                  0
                             1
                                2
                                     3
               1
## 3
                                 2
                                             5
      1
         1
            1
               1
                  1
                     1 18011
                             1
                                     3
                     5 18009
                                 2
                                             5
## 4
         1
            1
               0
                  0
                              1
                                         4
       1
                                     3
            1
                     4 17980
                                         4
                                             5
## 5
      1
         1
               1
                  1
                              1
                                 2
                                     3
## 6
      1
         1
            1
                    2 17965
                                 2
                                         4
                                             5
               1
                  0
                             1
                                     3
## 7
      1
         1
            1
               1
                  0 4 17907
                              1
                                 2
                                     3
                                         4
                                             5
                     3 17704
                                 2
                                             5
## 8
      1
         1
            1
               1
                  0
                             1
                                     3
                                         4
## 9
      1 1
              0
                  0 3 17691
                                2
                                     3
                                         4
                                             5
            1
                             1
## 10 1 1 0 0
                  0 5 17192 1 4
                                         3
                                             5
## [1] "Geração:"
## [1] 13
```

```
V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101
                            1 2
                                    3
                                           5
            1 1 0 5 18073
## 2
                            1
                                    3
                                           5
## 3
                 1 1 18011
                                           5
         1
            1
                            1
                                2
                                    3
                                        4
      1
               1
## 4
      1
         1
            1
               0
                 0 5 18009
                            1
                                2
                                    3
                                        4
                                           5
## 5
              1 1 4 17980
                            1
                               2
                                    3
                                       4
                                           5
      1
         1
            1
## 6
            1
               1
                 0 2 17965
                                    3
                                           5
      1
         1
                 0 4 17907
                                2
## 7
      1
         1
            1
               1
                            1
                                    3
                                        4
                                           5
## 8
      1
         1
            1
              1
                 0
                    3 17704
                             1
                                2
                                    3
                                        4
                                           5
## 9
              0 0 3 17691
                            1 2
                                       4
                                           5
      1 1 1
                                    3
## 10 1 1 0 0 0 5 17192
                            1 4
                                           5
## [1] "Geração:"
## [1] 14
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101
                               2
                                    3
                                           5
      1
                            1
## 2
      1
         1
            1
              1
                 0 5 18073
                             1
                                2
                                    3
                                        4
                                           5
## 3
         1
            1
                 1 1 18011
                                2
                                    3
                                        4
                                           5
      1
              1
                            1
                                           5
## 4
           1
               0 0 5 18009
## 5
              1 1 4 17980
         1 1
                            1 2
                                    3
                                       4
                                           5
      1
                    2 17965
## 6
      1
         1
            1
              1
                 0
                            1
                               2
                                    3
                                       4
                                           5
## 7
      1
         1
            1
              1
                 0 4 17907
                            1
                               2
                                    3
                                       4
                                           5
## 8
         1
            1
               1
                 0 3 17704
                            1 2
                                    3
                                           5
## 9
              0 0 3 17691
                            1 2
                                        4
                                           5
      1 1
            1
                                    3
## 10 1 1 0 0 0 5 17192 1
                                           5
## [1] "Geração:"
## [1] 15
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
                 1 5 18101
                            1
                               2
## 1
      1
         1 1 1
                                    3
                                           5
                 0 5 18073
                               2
                                           5
## 2
                            1
                                    3
      1
         1
            1
              1
                                           5
## 3
      1
         1
            1
               1
                 1 1 18011
                            1
                               2
                                    3
## 4
      1
         1
            1
               0
                 0
                    5 18009
                             1
                                2
                                    3
                                        4
                                           5
## 5
      1
         1
            1
               1
                 1 4 17980
                            1
                                2
                                    3
                                       4
                                           5
                               2
                                           5
## 6
      1
         1
            1
              1
                 0 1 17980
                            1
                                    3
                                        4
## 7
                 0 2 17965
                            1 2
                                    3
                                        4
                                           5
      1
         1 1 1
## 8
      1
         1
            1
              1
                 0 4 17907
                            1
                               2
                                    3
                                        4
                                           5
## 9
      1 1 1 0 0 4 17834
                            1 2
                                    3
                                       4
                                           5
## 10 1 1 1 0
                 0 1 17777 5
                                           2
## [1] "Geração:"
## [1] 16
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
      1 1 1 1 1 5 18101 1 2
## 1
           1 1 0 5 18073 1
## 2
      1
         1
                               2
                                    3
                                           5
## 3
                 1 1 18011
                                        4
                                           5
      1
         1
            1
               1
                            1
                               2
                                    3
## 4
              0 0 5 18009
                            1 2
                                        4
                                           5
      1
         1
            1
                                    3
## 5
                 1 4 17980
                            1 2
                                           5
      1
         1
            1
               1
                                    3
                 0 1 17980
                                2
                                           5
## 6
      1
         1
            1
               1
                            1
                                    3
                                        4
         1
            1
                 0
                    2 17965
                                2
                                       4
                                           5
## 7
      1
              1
                            1
                                    3
## 8
      1 1
           1
                            1
                               2
                                        4
                                           5
              1
                 0 4 17907
                                    3
## 9
      1 1 1 0 0 4 17834
                            1 2
                                    3
                                       4
                                           5
                 0 1 17777
                            5
                                           2
## 10 1 1 1 0
                               1
                                    3
                                        4
## [1] "Geração:"
## [1] 17
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
     1 1 1 1 1 5 18101 1 2
## 1
                                  3
                                       4
```

```
1 1 1 1 0 5 18073 1 2
## 2
                                    3
                                           5
## 3
      1
         1
            1
              1
                 1 1 18011
                            1 2
                                    3
                                        4
                                           5
## 4
         1
            1
               0
                 0 5 18009
                             1 2
                                    3
                                        4
                                           5
## 5
                 1 4 17980
                                           5
         1
            1
                             1 2
                                    3
                                        4
      1
               1
## 6
      1
         1
            1
               1
                  0
                    1 17980
                             1
                                2
                                    3
                                        4
                                           5
## 7
         1
            1
                 0 2 17965
                            1
                               2
                                    3
                                        4
                                           5
      1
               1
## 8
      1
         1
            1
               1
                 0 4 17907
                             1 2
                                    3
                                           5
## 9
              0 0 4 17834
                               2
                                        4
      1
         1
            1
                             1
                                    3
                                           5
## 10 1 1 1 0 0 1 17777 5 1
                                           2
## [1] "Geração:"
## [1] 18
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
         1 1 1 1 5 18101 1 2
## 1
      1
                                    3
                                           5
## 2
                 0 5 18073
                            1
                               2
                                           5
            1
              1
                                    3
## 3
                  1
                    1 18011
                             1
                                2
                                    3
                                        4
                                           5
      1
         1
            1
               1
## 4
      1
         1
            1
               0
                 0
                    5 18009
                             1
                                2
                                    3
                                        4
                                           5
## 5
      1
         1
            1
                 1 2 17993
                             1
                                2
                                    3
                                        4
                                           5
               1
                                           5
## 6
      1
         1
            1
              1
                 1 4 17980
                             1
                                2
                                    3
                                        4
## 7
      1 1 1 1 0 1 17980
                             1 2
                                    3
                                        4
                                           5
                 0 2 17965
                                           5
## 8
      1
         1
           1
              1
                             1
                                2
                                    3
                                        4
## 9
      1 1 1 0 0 1 17925
                            1 2
                                    3
                                        4
                                           5
## 10 1 1 1 0 0 1 17925 5 1
                                           2
## [1] "Geração:"
## [1] 19
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
         1 1 1 1 5 18101 1 2
## 1
      1
                                    3
                                           5
## 2
         1
            1
               1
                 0 5 18073
                             1
                                2
                                    3
                                        4
                                           5
      1
## 3
                 1 1 18011
                             1
                                2
                                    3
                                        4
                                           5
      1
         1
            1
               1
## 4
               0 0 5 18009
                               2
                                        4
                                           5
      1
         1
            1
                            1
                                    3
                 1 2 17993
                                           5
## 5
      1
         1
            1
               1
                            1
                               2
                                    3
                                        4
## 6
      1
         1
            1
               1
                  1
                    4 17980
                             1
                                2
                                    3
                                        4
                                           5
## 7
      1
         1
            1
              1
                 0 1 17980
                            1 2
                                    3
                                        4
                                           5
## 8
                 0 2 17965
                            1 2
                                           5
      1 1 1 1
                                    3
                                        4
      1 1 1 0 0 1 17925
## 9
                            1 2
                                    3
                                        4
                                           5
## 10 1 1 1 0
                 0 1 17925
                             5
                               1
                                    3
                                        4
                                           2
## [1] "Geração:"
## [1] 20
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 1 5 18101
                             1
                               2
                                    3
                                        4
                                           5
         1 1 1 0 5 18073
                                        4
                                           5
## 2
      1
                             1
                               2
                                    3
## 3
      1
         1
            1
              1 1 1 18011
                                           5
## 4
      1
         1
            1
              0 0 5 18009
                             1
                               2
                                    3
                                        4
                                           5
## 5
                 1
                    2 17993
                             1
                               2
                                        4
                                           5
      1
         1
            1
               1
                                    3
## 6
                 1 4 17980
                               2
                                        4
                                           5
      1
         1
            1
               1
                            1
                                    3
## 7
                 0 1 17980
                               2
                                    3
                                           5
      1
         1
            1
               1
                             1
                    2 17965
                  0
                                2
                                        4
                                           5
## 8
      1
         1
            1
               1
                             1
                                    3
## 9
               0
                 0 1 17925
                                2
                                        4
                                           5
      1
         1
            1
                             1
                                    3
## 10 1
         1
           1
              0 0 1 17925
                            5 1
                                           2
```



```
## [1] "popsize = 10,ngeracoes=20,p_Cross=0.1,p_Mutacao=0.9"
                             V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
                                                  5
## 2
                        1 18011
                     1
##
                        2
                                                  5
## 4
                    0
                        5 17182
                                                  5
                     1
                        1 18011
                                                  5
                        4 17980
                                                  5
## 6
                 1
                     1
                                                  5
##
              0
                 0
                    0
                        4 16902
                                                  5
## 8
                        3 17704
              0
                 0
                    0
                        5 17182
                                                  5
          0
              0
                 0
                    0
                        1 17102
       1
##
  [1]
       "Geração:"
   [1] 1
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
## 1
                        1 18011
                                         3
                                                  5
                        4 17980
                                                  5
## 2
                 1
                    1
                                         3
## 3
                        3 17704
                                                  5
##
                 0
                    0
                        5 17195
                                                  4
## 5
                 0
                    0
                        5
                                                  5
                                                  5
## 6
              0
                 0
                    0
                        2 17102
                                                  5
## 8
                 0
                    0
                        4 16902
                                                  5
              0
              0
                 0
                    0
                        1 16867
                                     5
                                              3
                                                  2
## 10
                        2 15851
                                                  2
       1
          1
              0
                 0
## [1] "Geração:"
```

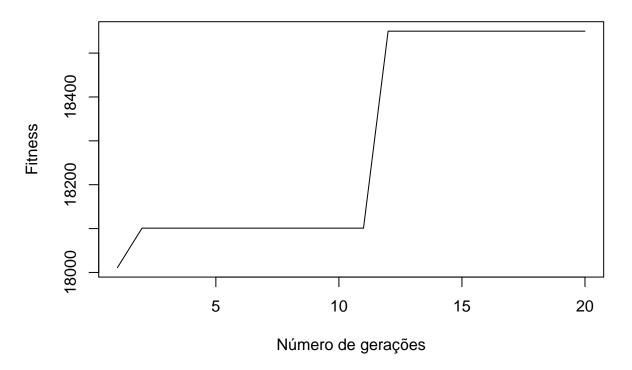
```
## [1] 2
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101 1 2
               1 1 1 18011
                                            5
## 2
      1
         1
                             1
                                2
                                    3
                                        4
            1
## 3
            1
               1
                  1
                    4 17980
                             1
                                    3
                                        4
                                            5
## 4
                 0 1 17980
                             1 2
                                    3
                                        4
                                            5
      1
         1
            1
               1
## 5
               0
                  0 1 17925
                             2
      1
         1
            1
                                    5
                                            4
                  0 3 17704
                             1 2
## 6
      1
         1
            1
               1
                                    3
                                        4
                                            5
## 7
      1
         1
            1
               0
                  0 5 17242
                             4
                                1
                                    5
                                        2
                                            3
## 8
               0 0 5 17195 2 1
                                        3
                                            4
      1
         1
            1
                                    5
## 9
      1 1
            0 0 0 5 17182 1 2
                                    3
                                        4
                                            5
                  0 2 17102 1
                                2
                                            5
## 10 1 0 0 0
                                    3
                                        4
## [1] "Geração:"
## [1] 3
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
      1
         1 1 1 1 5 18101
                             1
                                2
                                    3
                                            5
## 2
         1
            1 1 1 1 18011
                                2
                                        4
                                            5
      1
                             1
                                    3
## 3
            1
                 1 4 17980
                                            5
## 4
                 0 1 17980
                                2
                                    3
                                            5
      1
         1
            1
              1
                             1
                                        4
## 5
      1
         1
            1
              0
                  0 1 17925
                             2
                                1
                                    5
                                        3
                                            4
## 6
      1
         1
            1
               1
                  0 3 17704
                             1
                               2
                                    3
                                        4
                                            5
## 7
      1
         1
            1
               0
                  0 5 17242
                                            3
                 0 5 17195 2 1
## 8
               0
                                        3
                                            4
      1
         1
            1
                                    5
## 9
      1
         1
            0
              0
                 0 5 17182 1
                                2
                                    3
                                        4
                                            5
## 10 1 0 0 0 0 2 17102 1 2
                                        4
                                            5
                                    3
## [1] "Geração:"
## [1] 4
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101 1 2
                                    3
      1
                                            5
## 2
      1
         1
            1
               1
                 1 1 18011
                             1
                                2
                                    3
                                            5
## 3
      1
         1
            1
               1
                  1
                     4 17980
                             1
                                2
                                    3
                                        4
                                            5
## 4
      1
         1
            1
               1
                  0 1 17980
                             1
                                2
                                    3
                                        4
                                            5
                             2
                                            4
## 5
      1
         1
            1
               0
                 0 1 17925
                                    5
                                        3
## 6
                 0 1 17925
                             2
                                            5
         1
            1
               0
                               1
                                    3
                                        4
      1
## 7
      1
         1
            1
               1
                  0
                     3 17704
                             1
                                2
                                    3
                                        4
                                            5
## 8
      1
         1
            1
              0
                 0 3 17691
                            3
                               1
                                    2
                                        4
                                            5
## 9
      1
         1
            1
              0 0 3 17691 1 3
                                            4
## 10 1 1 1 0 0 5 17242 4 1
                                            3
## [1] "Geração:"
## [1] 5
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 1 1 1 5 18101 1 2
                                    3
                                            5
      1
                 1 1 18011
                             1
                                2
                                        4
                                            5
## 2
      1
         1
            1
               1
                                    3
## 3
                                        4
                                            5
         1
            1
               1
                 1 4 17980
                             1 2
                                    3
      1
## 4
                  0 1 17980
                                            5
      1
         1
            1
               1
                             1 2
                                    3
                  0 1 17925
                             2 1
## 5
         1
            1
               0
                                    5
                                        3
                                            4
      1
                  0
                    1 17925
                             2 1
                                            5
## 6
      1
         1
            1
               0
                                    3
                                        4
## 7
                 0 4 17834
                             2 1
                                        4
                                            5
      1
         1
            1
               0
                                    3
## 8
      1
         1
            1
              0 0 4 17729
                             5 3
                                    1
                                        2
                                            4
                  0 3 17704
                             1 2
## 9
      1
         1
            1
               1
                                    3
                                        4
                                            5
## 10
         1 1 0
                  0 3 17691
                             3
                                        4
                                            5
      1
## [1] "Geração:"
## [1] 6
   V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
```

```
1 1 1 1 5 18101 1 2
                                         5
      1
        1
           1 1 1 1 18011 1 2
                                  3
                                      4
                                         5
## 3
         1
           1
              1
                1 4 17980
                           1 2
                                         5
## 4
                0 1 17980
         1
           1
                           1 2
                                  3
                                      4
                                         5
      1
              1
## 5
      1
         1
           1
              0
                 0 5 17979
                           1
                              3
                                  4
                                      2
                                         5
## 6
           0
             0 0 5 17931
                           1 3
                                  5
                                      2
                                         4
      1
         1
## 7
              0
                0 1 17925
      1
         1
           1
                                  5
                                         4
                           2 1
## 8
      1
         1
           1
              0 0 1 17925
                                  3
                                      4
                                         5
## 9
      1 1 1
             0 0 4 17834 2 1
                                  3
                                      4
                                         5
## 10 1 1 0 0 0 3 17812 3 1
                                         2
## [1] "Geração:"
## [1] 7
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101 1 2
                                  3
                                         5
           1 1 1 1 18011
                              2
                                  3
                                         5
      1
         1
                           1
## 3
      1
         1
           1
              1
                 1
                   4 17980
                            1
                              2
                                  3
                                      4
                                         5
## 4
      1
         1
           1
                0 1 17980
                              2
                                      4
                                         5
              1
                           1
                                  3
## 5
      1
        1
           1
              0 0 5 17979
                           1
                                         5
## 6
      1 1 0 0 0 5 17931
                           1 3
                                         4
                                  5
                                      2
## 7
      1
        1
           1
             0
                0 1 17925
                           2 1
                                  5
                                      3
                                         4
## 8
      1
        1 1 0 0 1 17925
                           2 1
                                  3
                                      4
                                         5
## 9
      1 1 1
             0 0 4 17834 2 1
                                         5
## 10 1 1 0 0 0 3 17812 3 1
                                         2
## [1] "Geração:"
## [1] 8
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101 1
                              2
                                  3
                                         5
      1
           1 1 1 1 18011
                              2
                                      4
                                         5
## 2
      1
         1
                           1
                                  3
## 3
                                         5
                1 4 17980
                           1 2
                                  3
      1
         1
           1
              1
## 4
      1
         1
           1
              1
                 0 1 17980
                           1
                              2
                                  3
                                         5
## 5
      1
         1
           1
              0
                0 5 17979
                           1
                              3
                                  4
                                      2
                                         5
## 6
      1
         1
           0 0
                0 5 17931
                           1
                              3
                                  5
                                      2
                                         4
## 7
                           2 1
                                      3
                                         4
      1
        1
           1
              0 0 1 17925
## 8
             0 0 1 17925
                           2 1
                                      4
                                         5
     1 1 1
                                  3
                           2
## 9
      1 1 1
             0 0 4 17834
                              1
                                  3
                                      4
                                         5
## 10 1 1 0 0 0 3 17812 3 1
                                         2
## [1] "Geração:"
## [1] 9
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 1 1 1 5 18101 1 2
                                  3
        1 1 1 1 1 18011
                                         5
                           1
## 3
      1
         1
           1 1 1 4 17980
                           1 2
                                  3
                                      4
                                         5
## 4
                 0 1 17980
                                      4
      1
         1
           1
              1
                           1
                              2
                                  3
                                         5
## 5
              0 0 5 17979
                                      2
                                         5
      1
         1
           1
                           1
                              3
                                  4
## 6
                0 5 17959
                           1 5
                                         2
      1
         1
           1
              0
                                  3
                0 5 17931
## 7
                                      2
         1
           0
              0
                           1
                              3
                                  5
                                         4
      1
           1 0 0 1 17925
                           2 1
                                         4
## 8
      1
        1
                                  5
                                      3
## 9
      1 1 1 0 0 1 17925 2 1
                                         5
## 10 1 1 1 0 0 4 17834 2 1
                                         5
## [1] "Geração:"
## [1] 10
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
##
## 1
     1 1 1 1 1 5 18101 1 2
                                  3
                                         5
## 2 1 1 1 1 1 1 18011 1 2
                                      4
```

```
## 3
      1 1 1 1 1 4 17980 1 2
                                   3
                                           5
## 4
      1
         1
            1
              1
                 0 1 17980
                            1 2
                                   3
                                       4
                                           5
## 5
                                       2
         1
            1
              0
                 0 5 17979
                             1
                               3
                                           5
                 0 5 17959
                                           2
## 6
         1
            1
              0
                             1
                               5
                                   3
                                       4
      1
## 7
      1
         1
            0
              0
                 0 5 17931
                            1
                               3
                                   5
                                       2
                                           4
## 8
            1
              0
                 0 1 17925
                            2 1
                                   5
                                       3
                                           4
      1
         1
              0 0 1 17925
                            2 1
                                           5
      1
         1
           1
## 10 1 1 1 0 0 4 17834 2 1
                                           5
## [1] "Geração:"
## [1] 11
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
        1 1 1 1 5 18101 1
                               2
      1
                                   3
                                           5
## 2
      1
         1
            1
              1
                 1 1 18011
                            1
                               2
                                   3
                                       4
                                           5
## 3
                               2
                                           5
            1
              1
                 1 4 17980
                            1
                                   3
## 4
                 0 1 17980
                               2
                                   3
                                       4
                                           5
      1
         1
            1
               1
                            1
## 5
      1
         1
            1
               0
                 0 5 17979
                             1
                               3
                                   4
                                       2
                                           5
## 6
      1
         1
            1
              0
                 0 5 17959
                            1
                               5
                                   3
                                       4
                                           2
## 7
      1
         1
            0
              0
                 0 5 17931
                            1
                               3
                                           4
## 8
      1 1 1 0 0 1 17925
                            2 1
                                       3
                                           4
                                   5
## 9
      1 1 1
              0 0 1 17925 2 1
                                   3
                                       4
                                           5
## 10 1 1 0 0 0 1 17921
                            1 3
                                       5
                                           2
## [1] "Geração:"
## [1] 12
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550
                            1 3
                                   5
## 2
      1
         1
            1 1 1 5 18101
                            1
                               2
                                   3
                                           5
## 3
         1
                 1 1 18011
                               2
                                       4
                                           5
      1
            1
              1
                            1
                                   3
## 4
                 1 4 17980
                            1
                               2
                                   3
                                       4
                                           5
      1
         1
            1
              1
                               2
                                           5
## 5
         1
            1
              1
                 0 1 17980
                            1
                                   3
                                       4
      1
## 6
      1
         1
            1
               0
                 0 5 17979
                            1 3
                                   4
                                       2
                                           5
                 0 5 17959
## 7
      1
         1
            1
               0
                            1
                               5
                                   3
                                       4
                                           2
## 8
      1
         1
            0 0
                 0 5 17931
                            1
                               3
                                   5
                                       2
                                           4
                            2 1
                                           4
## 9
      1 1 1
              0 0 1 17925
                                       3
## 10 1 1 1 0 0 1 17925 2 1
                                   3
                                       4
                                           5
## [1] "Geração:"
## [1] 13
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550 1 3
                                   5
                                           2
## 2
      1
         1
            1
              1
                 1 5 18101
                            1
                               2
                                   3
                                       4
                                           5
                                           5
## 3
      1
         1
              1 1 1 18011
                            1 2
                                   3
                                       4
           1
## 4
      1
         1
              1 1 4 17980
                                           5
           1
## 5
      1
         1
            1
              1
                 0 1 17980
                            1
                               2
                                   3
                                       4
                                           5
## 6
                 0 5 17979
                                       2
      1
         1
            1
              0
                            1
                               3
                                   4
                                           5
## 7
                 0 5 17959
                               5
                                       4
                                           2
      1
         1
            1
              0
                            1
                                   3
## 8
            0
              0
                 0 5 17931
                            1 3
                                       2
                                           4
      1
         1
                                   5
                            2 1
              0 0 1 17925
## 9
        1
                                   5
                                       3
                                           4
      1
            1
## 10 1 1 1 0 0 1 17925 2 1
                                           5
## [1] "Geração:"
## [1] 14
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
## 1
      1 1 0 0 0 4 18550 1 3
                                   5
                                       4
                                           2
            1 1 1 5 18101 1 2
                                           5
## 2
         1
                                   3
            1 1 1 1 18011 1 2
## 3
      1
         1
                                   3
                                       4
                                           5
## 4
      1 1 1 1 1 4 17980 1 2
                                           5
```

```
## 5
      1 1 1 1 0 1 17980 1 2
                                           5
## 6
         1
            1
              0 0 5 17979
                            1 3
                                    4
                                       2
                                           5
## 7
            1
                 0 5 17959
                                           2
                 0 5 17931
                                           4
## 8
            0
              0
                             1 3
                                   5
                                       2
      1 1
## 9
      1
         1
           1
              0
                 0 1 17925
                             2
                                    5
                                        3
                                           4
## 10 1 1 1 0 0 1 17925
                            2 1
                                    3
                                           5
## [1] "Geração:"
## [1] 15
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                    5
                                           2
      1
         1
            1
              1 1 5 18101
                             1
                                           5
## 3
                                           5
         1
                 1 1 18011
                                2
                                    3
                                        4
      1
            1
               1
                            1
                                           5
## 4
      1
         1
            1
               1
                 1 4 17980
                            1
                               2
                                    3
                                        4
## 5
                               2
                                           5
      1
         1
            1
               1
                 0 1 17980
                            1
                                    3
## 6
            1
               0
                 0 5 17979
                            1 3
                                    4
                                       2
                                           5
      1
         1
## 7
      1
         1
            1
               0
                 0 5 17959
                            1
                               5
                                    3
                                        4
                                           2
## 8
      1
         1
            0
              0
                 0 5 17931
                            1 3
                                    5
                                       2
                                           4
## 9
      1 1 1
              0 0 1 17925
                            2 1
                                        3
                                           4
## 10 1 1 1 0 0 1 17925
                            2 1
                                           5
## [1] "Geração:"
## [1] 16
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550
                               3
                                           2
                            1
                                    5
## 2
      1
         1
            1
                 1 5 18101
                             1
                                2
                                    3
                                           5
              1
## 3
              1 1 1 18011
                                        4
                                           5
      1
         1
            1
                            1
                               2
                                    3
              1 1 4 17980
## 4
      1
         1
            1
                             1 2
                                    3
                                        4
                                           5
## 5
         1
                 0 1 17980
                            1
                                2
                                    3
                                        4
                                           5
      1
            1
               1
## 6
               0
                 0
                    5 17979
                                       2
                                           5
      1
         1
            1
                            1
                                3
                                    4
                 0 5 17959
                                           2
## 7
         1
            1
               0
                            1 5
                                    3
                                       4
      1
## 8
      1
         1
            0
               0
                 0 5 17931
                            1 3
                                    5
                                       2
                                           4
                            2 1
## 9
      1
         1
            1
              0 0 1 17925
                                    5
                                        3
                                           4
## 10 1 1 1 0 0 1 17925 2 1
                                           5
## [1] "Geração:"
## [1] 17
                         V7 V8 V9 V10 V11 V12
##
     V1 V2 V3 V4 V5 V6
## 1
         1 0 0 0 4 18550 1 3
                                    5
      1
                                           2
## 2
                 1 5 18101
                            1 2
                                           5
## 3
                 1 1 18011
                            1
                               2
                                    3
                                        4
                                           5
      1
         1
            1
               1
## 4
      1
         1
            1
               1
                 1
                    4 17980
                             1
                                2
                                    3
                                        4
                                           5
                                           5
## 5
      1
         1
                 0 1 17980
                             1
                               2
                                    3
                                       4
            1
              1
## 6
      1
         1
              0
                 0 5 17979
                               3
                                       2
                                           5
            1
## 7
        1
            1
               0
                 0 5 17959
                            1 5
                                    3
                                        4
                                           2
      1
## 8
              0
                 0 5 17931
                                       2
                                           4
      1
        1
            0
                            1 3
                                    5
## 9
                            2 1
                                        3
                                           4
      1 1
            1
              0 0 1 17925
                                    5
## 10 1 1 1 0
                 0 1 17925 2 1
                                           5
## [1] "Geração:"
## [1] 18
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550
                            1
                               3
                                    5
                                           2
                 1 5 18101
                                2
                                           5
## 2
      1
         1
            1
               1
                            1
                                    3
                                        4
## 3
                            1
                               2
                                    3
                                        4
                                           5
      1
         1
            1
               1
                 1 1 18011
                            1 2
                                           5
## 4
      1
         1
            1
               1
                 1 4 17980
                                    3
              1 0 1 17980 1 2
## 5
      1
         1
            1
                                    3
                                       4
                                           5
      1 1 1 0 0 5 17979 1 3
                                        2
## 6
                                           5
```

```
1 1 1 0 0 5 17959 1 5
                                        2
                                 3
     1 1 0 0 0 5 17931
                          1 3
                                    2
                                        4
                                 5
      1 1 1 0 0 1 17925
                          2 1
                                    3
                                        4
## 10 1 1 1 0 0 1 17925 2 1
                                 3
                                        5
## [1] "Geração:"
## [1] 19
     V1 V2 V3 V4 V5 V6
                       V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                        2
                                 5
## 2
      1
        1 1 1 1 5 18101
                          1
                             2
                                 3
                                     4
                                        5
## 3
      1 1 1 1 1 18011
                          1 2
                                    4
                                        5
                                 3
## 4
      1 1 1 1 1 4 17980
                          1 2
                                 3
                                        5
## 5
        1 1 1
                0 1 17980
                          1 2
                                    4
                                        5
      1
                                 3
## 6
      1
        1
          1 0 0 5 17979
                          1
                             3
                                 4
                                    2
                                        5
## 7
                                        2
     1
        1
           1
             0 0 5 17959
                          1 5
                                 3
                                    4
           0 0 0 5 17931
## 8
      1
        1
                          1 3
                                 5
                                    2
                                        4
                          2 1
## 9
      1
        1
           1
             0 0 1 17925
                                 5
                                    3
                                        4
## 10 1 1 1 0 0 1 17925 2 1
                                        5
## [1] "Geração:"
## [1] 20
##
     V1 V2 V3 V4 V5 V6
                       V7 V8 V9 V10 V11 V12
## 1
     1 1 0 0 0 4 18550 1 3
                                 5
                                        2
        1 1 1 1 5 18101
                                        5
## 3
             1 1 1 18011
                                        5
        1
           1
                          1
                             2
                                     4
      1
                                 3
## 4
      1
        1
           1
             1 1 4 17980
                          1
                             2
                                 3
                                    4
                                        5
## 5
      1
        1 1 1 0 1 17980
                                    4
                                        5
                          1 2
                                 3
## 6
      1
        1 1 0 0 5 17979
                          1 3
                                 4
                                    2
                                        5
## 7
      1
        1
           1
             0 0 5 17959
                          1 5
                                 3
                                    4
                                        2
## 8
      1
        1
           0 0 0 5 17931
                          1 3
                                 5
                                    2
                                        4
## 9
        1 1 0 0 1 17925
                          2 1
                                 5
                                    3
                                        4
      1
## 10 1 1 1 0 0 1 17925 2 1
                                        5
```



```
## [1] "popsize = 10,ngeracoes=20,p_Cross=0.9,p_Mutacao=0.9"
                             V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
                       1 18011
                                                  5
## 2
                        4 17980
                    1
##
                        2
                                                  5
## 4
                                                  5
                    1
                         17980
                 0
                    0
                       5 17182
                                                  5
                       5 18101
                                                  5
## 6
                 1
                    1
                                                  5
##
              0
                 0
                    0
                       1 17102
                                                  5
## 8
                    0
                       5 18073
              0
                 0
                       2 17102
                                                  5
                    0
           1
              1
                       1 17980
## 10
       1
##
  [1]
       "Geração:"
   [1] 1
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
## 1
                    1
                       5 18101
                                         3
                                                  5
                       5 18073
                                                  5
## 2
                 1
                    0
                                 1
                                         3
## 3
                       1 18011
                                                  5
##
                       2 17993
                                                  5
                 1
                    1
## 5
                                                  5
                                                  5
## 6
                 1
                    0
                       1 17980
## 7
## 8
                    0
                       4 17907
                                                  5
       1
              1
                 1
                       3 17812
              0
                 0
                    0
                                 3
                                                  2
## 10
                       5 17182
                                                  5
       1
          1
              0
                 0
## [1] "Geração:"
```

```
## [1] 2
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 0 0 0 4 18550 1 3
                  1 5 18101
                                             5
## 2
                             1
                                 2
                                     3
                                         4
      1
         1
            1
               1
## 3
      1
            1
               1
                  0
                     5 18073
                             1
                                     3
                                         4
                                             5
## 4
                  1 1 18011
                                2
                                         4
                                             5
      1
         1
            1
               1
                             1
                                     3
## 5
                  1 2 17993
                                             5
      1
         1
            1
               1
                                     3
                  1 4 17980
                             1 2
## 6
      1
         1
            1
               1
                                     3
                                         4
                                             5
## 7
      1
         1
            1
               1
                  0 1 17980
                              1
                                 2
                                     3
                                         4
                                             5
## 8
                                         2
                                             4
      1
         1
            1
               0
                  0 5 17959
                             1 5
                                     3
## 9
      1 1 1 0 0 1 17925 2 1
                                     3
                                         5
                                             4
                  0 4 17907
## 10 1 1 1 1
                             1 2
                                     3
                                         4
                                             5
## [1] "Geração:"
## [1] 3
##
      V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550
                             1
                                3
                                     2
                                         5
                                             4
## 2
            1 1 1 5 18101
                                 2
                                     3
                                         4
                                             5
      1
         1
                              1
## 3
            1
                  0 5 18073
                                             5
## 4
                  1 1 18011
                                             5
      1
         1
            1
               1
                             1
                                 2
                                     3
                                         4
## 5
      1
         1
            1
               0
                  0 5 18009
                             1
                                5
                                     3
                                         2
                                             4
## 6
      1
         1
            1
               1
                  1 2 17993
                             1
                                2
                                     3
                                         4
                                             5
## 7
      1
         1
            1
               1
                  1 4 17980
                             1 2
                                             5
## 8
                  0 1 17980
                             1 2
                                             5
      1
         1
            1
               1
                                     3
                                         4
## 9
      1
         1
            1
               0
                  0 5 17959
                             1 5
                                     3
                                         2
                                             4
## 10 1 1 1 0 0 1 17925 2 1
                                             4
                                     3
## [1] "Geração:"
## [1] 4
##
     V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 0 0 0 4 18550 1 3
                                     2
      1
## 2
      1
         1
                  1
                     5 18101
                             1
                                 2
                                     3
                                         4
                                             5
            1
               1
                    5 18073
## 3
       1
         1
            1
               1
                  0
                              1
                                 2
                                     3
                                         4
                                             5
## 4
      1
         1
            1
               1
                  1 1 18011
                              1
                                 2
                                     3
                                         4
                                             5
                                         2
## 5
      1
         1
            1
               0
                  0 5 18009
                                 5
                                     3
                                             4
## 6
                  1 2 17993
                                2
                                             5
         1
            1
               1
                             1
                                     3
                                         4
      1
## 7
      1
         1
            1
               1
                  1
                     4 17980
                             1
                                 2
                                     3
                                         4
                                             5
## 8
         1
                  0 1 17980
                             1 2
                                     3
                                         4
                                             5
      1
            1
               1
## 9
      1
         1
            1
              0 0 5 17959
                             1 5
                                             4
## 10 1 1 1 0 0 1 17925 2 1
                                     3
                                             4
## [1] "Geração:"
## [1] 5
##
      V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
## 1
         1 0 0 0 4 18550
                             1
                                3
                                     2
      1
                                             4
                  1 5 18101
                                 2
                                         4
## 2
      1
         1
            1
               1
                             1
                                     3
                                             5
## 3
                    5 18073
                                         4
                                             5
         1
                  0
                             1
                                2
                                     3
      1
            1
               1
## 4
                                2
                                             5
      1
         1
            1
               1
                  1
                     1 18011
                             1
                                     3
                     5 18009
                                         2
## 5
         1
               0
                  0
                              1
                                 5
                                             4
       1
            1
                                     3
                     2 17993
                                 2
                                             5
## 6
      1
         1
            1
               1
                  1
                              1
                                     3
                                         4
## 7
                                2
                                         4
                                             5
      1
         1
            1
               1
                  1 4 17980
                             1
                                     3
## 8
      1
         1
            1 1
                  0 1 17980
                             1 2
                                     3
                                         4
                                             5
                                         2
## 9
      1
         1
            1
               0
                  0 5 17959
                             1
                                5
                                     3
                                             4
## 10
         1 1
               0
                  0 1 17925
                             2
                                         5
                                             4
      1
## [1] "Geração:"
## [1] 6
   V1 V2 V3 V4 V5 V6
                          V7 V8 V9 V10 V11 V12
##
```

```
1 1 0 0 0 4 18550 1 3
## 1
         1
           1 1 1 5 18101
                           1 2
                                  3
                                      4
                                          5
## 3
           1
                0 5 18073
                           1 2
                                          5
## 4
                1 1 18011
                           1
                              2
                                  3
                                      4
                                          5
      1
         1
           1
              1
## 5
      1
         1
           1
              0
                 0 5 18009
                           1
                              5
                                  3
                                      2
                                          4
## 6
              0 0 5 18009
                           2 1
                                  3
                                          4
      1
         1
           1
                                      5
## 7
                 1 2 17993
                                          5
      1
         1
           1
              1
                 1 4 17980
                               2
## 8
      1
         1
           1
              1
                           1
                                  3
                                      4
                                          5
## 9
      1 1 1 1 0 1 17980 1 2
                                  3
                                      4
                                          5
## 10 1 1 1 0 0 5 17959 1 5
                                          4
## [1] "Geração:"
## [1] 7
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
        1 0 0 0 4 18550
                           1 3
                                  2
     1
## 2
                 1
                   5 18101
                               2
                                  3
                                      4
                                          5
      1
         1
           1 1
                            1
## 3
      1
         1
           1
              1
                 0 5 18073
                            1
                               2
                                  3
                                      4
                                          5
## 4
      1
         1
           1
                1 1 18011
                              2
                                      4
                                          5
              1
                           1
                                  3
## 5
      1
        1
           1
              0 0 5 18009
                                          4
## 6
      1 1 1 0 0 5 18009
                           2 1
                                  3
                                          4
                                      5
## 7
      1
        1
           1
              1
                1 2 17993
                           1
                              2
                                  3
                                      4
                                          5
## 8
      1
        1 1 1 1 4 17980
                           1 2
                                  3
                                      4
                                          5
## 9
      1 1 1 1 0 1 17980
                                          5
## 10 1 1 1 1 0 2 17965 1 2
                                  3
                                      4
                                          5
## [1] "Geração:"
## [1] 8
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
        1 0 0 0 4 18550
                           1
                              3
                                  2
      1
## 2
                   5 18101
                              2
                                      4
                                          5
      1
         1
           1
              1
                 1
                           1
                                  3
## 3
                 0 5 18073
                                          5
                           1
                              2
                                  3
      1
         1
           1
              1
## 4
      1
         1
           1
              1
                 1 1 18011
                           1
                              2
                                  3
                                          5
## 5
      1
         1
           1
              0
                 0 5 18009
                           1
                              5
                                  3
                                      2
                                          4
## 6
      1
         1
           1
              0 0 5 18009
                           2 1
                                  3
                                      5
                                          4
                           1 2
                                          5
## 7
      1
        1
           1
              1
                1 2 17993
                                  3
## 8
     1 1 1 1 1 4 17980
                           1 2
                                  3
                                      4
                                          5
## 9
      1 1 1 1
                0 1 17980
                           1
                               2
                                  3
                                      4
                                          5
## 10 1 1 1 1 0 2 17965
                           1 2
                                          5
## [1] "Geração:"
## [1] 9
##
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                  2
                                          4
           1 1 1 5 18101
                                          5
        1
                           1
## 3
         1
           1 1 0 5 18073
                           1 2
                                  3
                                      4
                                          5
      1
## 4
                 1 1 18011
                                      4
      1
         1
           1
              1
                           1 2
                                  3
                                          5
## 5
              0 0 5 18009
                                          4
      1
         1
           1
                           1 5
                                  3
## 6
              0
                 0 5 18009 2 1
      1
         1
           1
                                  3
                                          4
                   2 17993
                           1 2
## 7
         1
           1
                 1
                                  3
                                      4
                                          5
      1
              1
           1 1
                1 4 17980 1 2
                                      4
                                          5
## 8
      1
        1
                                  3
## 9
      1 1 1 1 0 1 17980 1 2
                                          5
## 10 1 1 1 1 0 2 17965 1 2
                                          5
## [1] "Geração:"
## [1] 10
     V1 V2 V3 V4 V5 V6
                        V7 V8 V9 V10 V11 V12
##
## 1
     1 1 0 0 0 4 18550 1 3
                                  2
                                      5
    1 1 1 1 1 5 18101 1 2
## 2
                                      4
```

```
1 1 1 1 0 5 18073 1 2
## 3
                                    3
                                           5
## 4
      1
         1
            1
              1 1 1 18011
                            1 2
                                    3
                                       4
                                           5
## 5
                                       2
         1
            1
               0
                 0 5 18009
                            1
                                    3
                                           4
## 6
              0 0 5 18009
                                           4
         1
            1
                             2
                               1
                                   3
                                       5
      1
## 7
      1
         1
            1
               1
                 1
                    2 17993
                               2
                                    3
                                       4
                                           5
## 8
                 1 4 17980
                            1 2
                                   3
                                       4
                                           5
      1
         1
            1
              1
            1 1 0 1 17980
                            1 2
                                           5
      1
         1
## 10 1 1 1 1 0 2 17965 1 2
                                    3
                                           5
## [1] "Geração:"
## [1] 11
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
         1 0 0 0 4 18550
                            1
                               3
                                    2
                                       5
      1
                 1 5 18101
                                           5
## 2
      1
         1
            1
              1
                            1
                               2
                                    3
                                       4
## 3
                 0 5 18073
                               2
                                           5
      1
            1
               1
                            1
                                    3
## 4
                 1
                    1 18011
                               2
                                    3
                                       4
                                           5
      1
         1
            1
               1
                            1
## 5
      1
         1
            1
               0
                 0
                    5 18009
                            1
                               5
                                    3
                                       2
                                           4
## 6
      1
         1
            1
              0
                 0 5 18009
                             2
                               1
                                       5
                                           4
                                    3
## 7
      1
         1
           1
              1
                 1 2 17993
                               2
                                    3
                                       4
                                           5
## 8
      1 1 1 1 4 17980
                            1 2
                                   3
                                       4
                                           5
## 9
      1 1 1 1
                 0 1 17980
                            1
                               2
                                    3
                                       4
                                           5
## 10 1 1 1 1 0 2 17965
                            1 2
                                    3
                                       4
                                           5
## [1] "Geração:"
## [1] 12
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550
                            1 3
                                    2
                                           4
## 2
      1
         1
            1 1 1 5 18101
                            1
                               2
                                    3
                                           5
## 3
         1
            1
                 0 5 18073
                            1
                                2
                                    3
                                       4
                                           5
      1
               1
## 4
                 1 1 18011
                               2
                                    3
                                       4
                                           5
      1
         1
            1
               1
                            1
                                       2
## 5
      1
         1
            1
               0
                 0 5 18009
                            1
                               5
                                    3
                                           4
## 6
      1
         1
            1
               0
                 0 5 18009
                            2 1
                                    3
                                       5
                                           4
                    2 17993
## 7
      1
         1
            1
               1
                 1
                            1
                               2
                                    3
                                       4
                                           5
## 8
      1
         1
            1
              1
                 1 4 17980
                            1
                               2
                                    3
                                       4
                                           5
                            1 2
                                           5
## 9
      1 1 1 1 0 1 17980
                                    3
                                       4
## 10 1 1 1 1 0 2 17965
                            1 2
                                   3
                                       4
                                           5
## [1] "Geração:"
## [1] 13
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550 1
                               3
                                    2
                                       5
## 2
      1
         1
            1
               1
                 1
                    5 18101
                             1
                                2
                                    3
                                       4
                                           5
                 0 5 18073
                                       4
                                           5
## 3
      1
         1
           1
                            1
                               2
                                    3
              1
## 4
      1
         1 1 1 1 1 18011
                                           5
## 5
      1
         1
           1
              0
                 0 5 18009
                            1 5
                                   3
                                       2
                                           4
## 6
              0
                 0 5 18009
                                       5
                                           4
      1
         1
            1
                            2
                               1
                                    3
## 7
                 1 2 17993
                               2
                                       4
                                           5
      1
         1
            1
              1
                            1
                                    3
## 8
                            1 2
                                    3
                                           5
      1
         1
            1
              1
                 1 4 17980
                 0 1 17980
                               2
                                           5
## 9
         1
            1
              1
                            1
                                    3
                                       4
      1
## 10 1 1 1 1
                 0 2 17965 1
                                           5
## [1] "Geração:"
## [1] 14
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
##
## 1
        1 0 0 0 4 18550 1 3
                                    2
                                       5
                                           4
      1
            1 1 1 5 18101
                            1 2
                                       4
                                           5
## 2
         1
                                    3
            1 1 0 5 18073 1 2
## 3
      1
         1
                                    3
                                       4
                                           5
## 4
      1 1 1 1 1 1 18011 1 2
                                       4
                                           5
```

```
1 1 1 0 0 5 18009 1 5
## 5
                                           4
         1
            1
              0 0 5 18009
                            2 1
                                    3
                                       5
                                           4
## 7
            1
                 1 2 17993
                                           5
                 1 4 17980
                                           5
## 8
           1
                             1 2
                                   3
                                       4
      1 1
              1
## 9
      1
         1
           1
               1
                 0 1 17980
                             1
                                       4
                                           5
## 10 1 1 1 0 0 5 17979
                            3 4
                                           2
## [1] "Geração:"
## [1] 15
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                    2
                                           4
      1
         1
            1
              1
                 1 5 18101
                                           5
                 0 5 18073
                                           5
## 3
         1
                            1
                                2
                                    3
                                       4
      1
            1
               1
## 4
      1
         1
            1
               1
                 1 1 18011
                            1
                               2
                                    3
                                       4
                                           5
## 5
                 0 5 18009
                                           4
      1
         1
            1
               0
                            1
                               5
                                    3
## 6
               0
                 0 5 18009
                            2 1
                                    3
                                       5
                                           4
      1
         1
            1
                    2 17993
## 7
      1
         1
            1
               1
                 1
                            1
                                2
                                    3
                                       4
                                           5
## 8
      1
         1
            1
                 1 4 17980
                            1 2
                                    3
                                       4
                                           5
              1
## 9
      1 1 1 1 0 1 17980
                            1 2
                                           5
## 10 1 1 1 0
                 0 5 17979 3 4
                                       5
                                           2
## [1] "Geração:"
## [1] 16
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
         1 0 0 0 4 18550
                               3
                                    2
## 1
      1
                            1
## 2
      1
         1
            1
                 1 5 18101
                             1
                                2
                                    3
                                           5
              1
## 3
                 0 5 18073
                                       4
                                           5
      1
         1
            1
              1
                            1
                               2
                                    3
## 4
      1
         1
            1
              1 1 1 18011
                             1
                               2
                                    3
                                       4
                                           5
## 5
         1
               0
                 0 5 18009
                             1
                               5
                                    3
                                       2
                                           4
      1
            1
## 6
               0
                 0 5 18009
                            2
                               1
                                       5
                                           4
      1
         1
            1
                                    3
                 1 2 17993
                            1 2
                                           5
## 7
         1
               1
                                    3
                                       4
      1
            1
## 8
      1
         1
            1
               1
                 1 4 17980
                            1 2
                                    3
                                       4
                                           5
## 9
      1
         1
            1
              1
                 0 1 17980
                            1
                                2
                                    3
                                       4
                                           5
## 10 1 1 1 0 0 5 17979 3 4
                                       5
                                           2
## [1] "Geração:"
## [1] 17
                         V7 V8 V9 V10 V11 V12
##
     V1 V2 V3 V4 V5 V6
## 1
         1 0 0 0 4 18550 1 3
                                   2
                                           4
      1
## 2
                 1 5 18101
                            1 2
                                           5
## 3
                 0 5 18073
                            1
                                2
                                    3
                                       4
                                           5
      1
         1
            1
               1
## 4
      1
         1
            1
               1
                 1
                    1 18011
                             1
                                2
                                    3
                                       4
                                           5
                                           4
## 5
      1
         1
              0
                 0 5 18009
                            1 5
                                    3
                                       2
            1
## 6
      1
         1
           1
              0
                 0 5 18009
                                           4
                            2 1
## 7
        1
           1
                 1
                    2 17993
                            1 2
                                   3
                                       4
                                           5
      1
              1
## 8
                 1 4 17980
                                       4
                                           5
      1
         1
           1
              1
                            1 2
                                    3
## 9
                 0 1 17980
                                       4
                                           5
      1 1
           1
              1
                            1 2
                                    3
## 10 1 1 1 0
                 0 5 17979 3 4
                                           2
## [1] "Geração:"
## [1] 18
##
     V1 V2 V3 V4 V5 V6
                         V7 V8 V9 V10 V11 V12
## 1
      1
         1 0 0 0 4 18550
                            1
                               3
                                    2
                                           4
                                2
## 2
      1
         1
            1
               1
                 1 5 18101
                            1
                                    3
                                       4
                                           5
## 3
                 0 5 18073
                            1
                               2
                                   3
                                       4
                                           5
      1
         1
            1
               1
                            1 2
                                           5
## 4
      1
         1
            1
               1
                 1 1 18011
                                    3
## 5
      1
         1
            1
              0 0 5 18009
                            1 5
                                    3
                                       2
                                           4
      1 1 1 0 0 5 18009 2 1
                                       5
## 6
                                           4
```

```
1 1 1 0 0 5 18009 3 4
                                        2
                                 1
     1 1 1 1 1 2 17993 1 2
                                     4
## 8
                                 3
                                        5
      1 1 1 1 1 4 17980
                          1 2
                                     4
                                        5
## 10 1 1 1 1 0 1 17980 1 2
                                 3
                                        5
## [1] "Geração:"
## [1] 19
     V1 V2 V3 V4 V5 V6
                       V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                 2
## 2
      1
        1 1 1 1 5 18101
                          1
                             2
                                 3
                                     4
                                        5
## 3
      1
        1 1 1 0 5 18073
                          1 2
                                     4
                                        5
                                 3
## 4
      1
        1 1 1 1 1 18011
                          1 2
                                 3
                                     4
                                        5
## 5
        1 1 0 0 5 18009
                                     2
                                        4
      1
                          1 5
                                 3
## 6
      1
        1
          1 0 0 5 18009
                          2 1
                                 3
                                     5
                                        4
                                     5
                                        2
## 7
      1
        1
           1
             0 0 5 18009
                          3 4
                                 1
             1 1 2 17993
## 8
      1
        1
           1
                          1 2
                                 3
                                     4
                                        5
                          1 2
## 9
      1
        1
          1
             1 1 4 17980
                                 3
                                     4
                                        5
## 10 1 1 1 1 0 1 17980 1 2
                                        5
## [1] "Geração:"
## [1] 20
##
     V1 V2 V3 V4 V5 V6
                       V7 V8 V9 V10 V11 V12
## 1
      1 1 0 0 0 4 18550 1 3
                                 2
                                        4
## 2
        1 1 1
                1 5 18101
                                        5
## 3
              1 0 5 18073
                                     4
                                        5
        1
           1
                          1
                             2
      1
                                 3
## 4
      1
        1
           1
             1 1 1 18011
                           1
                             2
                                 3
                                     4
                                        5
## 5
        1 1 0 0 5 18009
                                     2
                                        4
      1
                          1 5
                                 3
## 6
      1
        1 1 0 0 5 18009
                          2 1
                                 3
                                     5
                                        4
## 7
      1
        1 1
             0 0 5 18009
                          3 4
                                 1
                                     5
                                        2
## 8
      1
        1
           1 1 1 2 17993
                          1 2
                                 3
                                     4
                                        5
                                        5
## 9
          1 1 1 4 17980
                          1 2
      1
        1
                                 3
## 10 1 1 1 1 0 1 17980 1 2
                                        5
```



```
## [1] "popsize = 50,ngeracoes=20,p_Cross=0.9,p_Mutacao=0.9"
                              V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
                                                   5
                                                   5
## 2
                        3 17660
                     1
                                                   5
                        5
                                                   5
##
                     0
                                                   5
                                                   5
## 6
                 0
                     0
                        1 17925
                                                   5
##
                 0
                     0
                        1
                          17925
                                                   5
## 8
                        5 17182
##
                        5 18073
                                                   5
                     0
                                                   5
##
                     0
   10
                     0
                        3
                                                   5
                                                   5
##
   12
                        5 18073
                                                   5
## 13
                     0
## 14
                     0
                        4 16902
                                                   5
                                                   5
##
   15
                     1
                        1 18011
   16
                                                   5
   17
                     0
                        3 17691
                                                   5
                                                   5
                                                   5
   19
                                                   5
## 21
                        4 17980
                                                   5
                     1
                 1
   22
                     0
                        4
                          17834
                                                   5
   23
                                                   5
       1
                     1
                        4 17980
                 1
## 24
                        4 17980
```

```
1 1 1 0 0 5 18009 1
                                     2
                                         3
                                                  5
## 26
       1
           1
              1
                    0
                       2 17965
                                 1
                                     2
                                         3
                                              4
                                                  5
                 1
              0
                    0
                       1 17059
                                         3
                                              4
                                                  5
                                                  5
## 28
                 0
                    0
                        3 17691
                                     2
                                         3
                                              4
       1
           1
              1
## 29
       1
           0
              0
                 0
                    0
                        4 17102
                                     2
                                         3
                                              4
                                                  5
## 30
              0
                 0
                    0
                        2 17102
                                 1
                                     2
                                         3
                                              4
                                                  5
       1
           0
## 31
                 0
                    0
                        5 17182
                                     2
                                         3
                                                  5
       1
           1
              0
                                              4
                       5 18073
## 32
       1
           1
              1
                 1
                    0
                                 1
                                     2
                                         3
                                              4
                                                  5
## 33
       1
           1
              0
                 0
                    0
                        4 16902
                                 1
                                     2
                                         3
                                              4
                                                  5
## 34
                                              4
                                                  5
       1
           0
              0
                 0
                    0
                        3 17102
                                 1
                                     2
                                         3
##
  35
       1
           1
              1
                 1
                    1
                        2 17993
                                 1
                                     2
                                         3
                                              4
                                                  5
                                                  5
## 36
                 0
                    0
                        3 17006
                                     2
                                         3
                                              4
       1
           1
              0
                                 1
                                                  5
##
  37
       1
           1
              1
                 1
                    1
                        4 17980
                                 1
                                     2
                                         3
                                              4
                        5 18009
                                     2
                                                  5
## 38
       1
           1
              1
                 0
                    0
                                         3
                                              4
## 39
              0
                 0
                    0
                        2 17019
                                     2
                                         3
                                              4
                                                  5
       1
           1
                                 1
## 40
       1
           0
              0
                 0
                    0
                        2 17102
                                 1
                                     2
                                         3
                                              4
                                                  5
## 41
                    0 5 18073
                                     2
                                              4
                                                  5
       1
           1
              1
                                 1
                                         3
                 1
## 42
       1
           1
              1
                 1
                    1 4 17980
                                     2
                                         3
                                              4
                                                  5
## 43
                    0 1 17925
                                     2
                                         3
                                                  5
       1
           1
                 0
                                 1
                                              4
              1
## 44
       1
           1
              1
                 1
                    1
                       5 18101
                                 1
                                     2
                                         3
                                              4
                                                  5
## 45
       1
           1
              1
                 1
                    1
                       3 17660
                                 1
                                    2
                                         3
                                              4
                                                  5
           1
                 1
                    0
                       4 17907
                                     2
                                         3
                                                  5
              1
                       3 17691
                    0
                                     2
                                                  5
## 47
           1
              1
                 0
                                 1
                                         3
                                              4
       1
       1
          1
              1
                    0
                        3 17704
                                 1
                                     2
                                         3
                                              4
                                                  5
## 48
                 1
       1 1
                                              4
                                                  5
## 49
              0
                0 0 3 17006
                                 1
                                    2
                                         3
## 50 1 1 1 0
                    0 4 17834
                                 1
                                         3
                                              4
                                                  5
## [1] "Geração:"
## [1] 1
##
                             V7 V8 V9 V10 V11 V12
      V1 V2 V3 V4 V5 V6
## 1
       1
              0 0 0
                       4 18550
                                 1
                                     3
                                         4
                                              5
                                                  2
## 2
       1
           1
              1
                 1
                    1
                        5 18101
                                  1
                                     2
                                         3
                                              4
                                                  5
## 3
       1
           1
              1
                 1
                    0
                        5 18073
                                 1
                                     2
                                         3
                                              4
                                                  5
                                                  5
## 4
       1
           1
              1
                    1
                       1 18011
                                         3
                                              4
## 5
                       5 18009
                                     2
                                                  5
                 0
                    0
                                  1
                                         3
                                              4
       1
           1
              1
## 6
       1
           1
              1
                 1
                    1
                        2 17993
                                 1
                                     2
                                         3
                                              4
                                                  5
## 7
                    0
                      1 17980
                                 1
                                     2
                                         3
                                              4
                                                  5
       1
           1
              1
                 1
## 8
       1
           1
              1
                    1
                       4 17980
                                     2
                                         3
                                              4
                                                  5
## 9
                 0
                    0
                       5 17979
                                 3
                                     1
                                              5
                                                  2
       1
           1
              1
                                         4
## 10
       1
           1
              1
                 1
                    0
                        2 17965
                                  1
                                     2
                                         3
                                              4
                                                  5
                                                  4
## 11
       1
              0
                 0
                    0 5 17931
                                 3
                                     1
                                         2
                                              5
           1
## 12
                       1 17925
                                     2
                                         3
                                              4
                                                  5
       1
           1
              1
                 0
                    0
## 13
                 0
                    0
                       1 17925
                                     3
                                         2
                                              4
                                                  5
       1
           1
              1
                                 1
## 14
                        4 17907
                                     2
                                              4
                                                  5
       1
           1
              1
                 1
                    0
                                 1
                                         3
## 15
                    0
                        2 17890
                                              4
                                                  5
                 0
                                 1
                                     2
                                         3
       1
           1
              1
                    0
                                     2
                                                  5
## 16
       1
           1
              1
                 0
                        4 17834
                                         3
                                              4
                        3 17704
                                     2
                                                  5
## 17
                    0
                                 1
                                              4
       1
           1
              1
                 1
                                         3
                    0
                        3 17703
                                              5
                                                  2
## 18
       1
           1
              1
                 0
                                 3
                                     1
                                         4
## 19
                        3 17691
                                     2
                                              4
                                                  5
       1
           1
              1
                 0
                    0
                                 1
                                         3
## 20
       1
           1
              1
                 1
                    1
                        3 17660
                                 1
                                     2
                                         3
                                              4
                                                  5
                                 2
                                                  5
## 21
       1
           1
              0
                 0
                    0
                        4 17551
                                     3
                                         4
                                              1
## 22
                 0
                    0
                       1 17426
                                 4
                                     2
                                         3
                                                  5
       1
           1
              1
                                              1
                                 4
                                                  3
## 23
       1
           1
              1
                 0
                    0 5 17308
                                    1
                                         2
                                              5
## 24
       1
           1
                 0 0 5 17204
                                 2
                                    3
                                         5
                                              4
                                                  1
              1
## 25 1 1 1 0 0 5 17204 2 5
                                         3
                                              4
                                                  1
```

```
1 1 1 0 0 5 17195 5
                                     2
                                               3
                                                    4
                                           1
## 27
       1
           1
              0
                 0
                     0 5 17182
                                  1
                                      2
                                           3
                                               4
                                                   5
                     0
                        5 17102
                                           3
                                               4
                                                   5
                        3 17102
                                                   5
## 29
           0
              0
                  0
                     0
                                      2
                                           3
                                               4
       1
## 30
        1
           0
              0
                  0
                     0
                        4 17102
                                      2
                                           3
                                               4
                                                   5
## 31
              0
                  0
                     0
                        2 17102
                                  1
                                      2
                                           3
                                               4
                                                   5
       1
           0
## 32
                  0
                     0
                        1 17102
                                      2
                                           3
                                               4
                                                   5
       1
           0
              0
                        3 17102
## 33
       1
           0
              0
                  0
                     0
                                  1
                                      3
                                           4
                                               5
                                                   2
##
   34
       1
           0
              0
                  0
                     0
                        2 17102
                                  1
                                      3
                                           2
                                               4
                                                   5
## 35
                                               3
                                                   5
       1
           0
              0
                  0
                     0
                        2 17102
                                  1
                                      4
                                           2
##
   36
       1
           1
              0
                  0
                     0
                        1 17059
                                   1
                                      2
                                           3
                                               4
                                                   5
## 37
                  0
                     0
                        1 17059
                                   2
                                           3
                                               5
                                                   4
       1
           1
              0
                                      1
                        2 17019
                                                   5
##
   38
       1
           1
              0
                  0
                     0
                                  1
                                      2
                                           3
                                               4
                        3 17006
                                      2
                                               4
                                                   5
## 39
       1
           1
              0
                  0
                     0
                                           3
## 40
              0
                  0
                     0
                        2 16941
                                  4
                                               3
                                                    2
       1
           1
                                      1
                                           5
## 41
        1
           1
              0
                  0
                     0
                        2 16941
                                   1
                                      4
                                           5
                                               3
                                                    2
## 42
              0
                 0
                     0
                        4 16902
                                      2
                                               4
                                                   5
       1
           1
                                  1
                                           3
                                                   2
## 43
           1
              0
                  0
                     0
                        3 16839
                                           3
                                               4
## 44
                 0
                        4 16755
                                  5
                                           3
                                               4
                                                   2
       1
           1
              0
                     0
                                      1
## 45
        1
           1
              1
                  0
                     0
                        5 16705
                                  2
                                      4
                                          5
                                               3
                                                    1
                        4 16478
## 46
       1
           1
              1
                  0
                     0
                                  5
                                      3
                                           4
                                               1
                                                   2
           1
              0
                  0
                     0
                        3 16454
                                   2
                                      3
                                           5
                                               1
                                                    4
                 0
                     0
                        3 16438
                                  4
                                      2
                                               3
## 48
       1
           1
              0
                                           5
                                                   1
## 49
       1
           1
              0
                 0
                     0 4 15948
                                  4
                                      3
                                           2
                                               1
                                                   5
## 50 1 1 0 0 0 4 15948
                                  3
                                               2
                                           5
                                                    1
## [1] "Geração:"
## [1] 2
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
                0
                    0
                        4 18550
                                  1
                                      3
                                           4
                                               5
                                                    2
       1
           1
              0
                                                    5
## 2
                     1
                        5 18101
                                   1
                                      2
                                           3
                                               4
        1
              1
                  1
## 3
        1
           1
              1
                  1
                     0
                        5 18073
                                   1
                                      2
                                           3
                                               4
                                                   5
## 4
       1
           1
              1
                  1
                     1
                        1 18011
                                   1
                                      2
                                           3
                                               4
                                                   5
                                                   5
## 5
       1
           1
              1
                  0
                     0
                        5 18009
                                           3
                                               4
## 6
                     0
                       5 18009
                                   3
                                               5
                                                   2
           1
              1
                  0
                                      1
                                           4
       1
## 7
       1
           1
              1
                  0
                     0
                        5 18009
                                   4
                                      2
                                           3
                                               1
                                                   5
## 8
                  0
                     0
                       5 18009
                                  5
                                      2
                                               3
                                                   4
       1
           1
              1
                                          1
## 9
        1
           1
              1
                  1
                     1
                        2 17993
                                      2
                                           3
                                               4
                                                   5
## 10
       1
                     0
                        1 17980
                                  1
                                      2
                                           3
                                               4
                                                   5
           1
              1
                  1
## 11
        1
           1
              1
                  1
                     1
                        4 17980
                                   1
                                      2
                                           3
                                               4
                                                   5
                                                   2
## 12
       1
                 0
                     0 5 17979
                                   3
                                      1
                                           4
                                               5
           1
              1
## 13
                        2 17965
                                   1
                                      2
                                               4
                                                   5
       1
           1
              1
                  1
                     0
## 14
              0
                  0
                     0
                        5 17931
                                  3
                                      1
                                           2
                                               5
                                                   4
       1
           1
## 15
                  0
                     0
                        5 17931
                                  3
                                               2
                                                   5
       1
           1
              0
                                      1
                                           4
## 16
                     0
                        5 17931
                                               2
                                                    4
           1
              0
                  0
                                  3
                                      1
                                           5
       1
                     0
                        1 17925
                                      2
                                           3
                                               4
                                                   5
## 17
       1
           1
              1
                  0
                                  1
                        1 17925
                                           2
                                                   5
## 18
                  0
                     0
                                  1
                                      3
                                               4
       1
           1
              1
                     0
                        1 17925
                                  4
                                           2
                                               5
                                                   3
## 19
       1
           1
              1
                  0
                                      1
## 20
                        1 17925
                                   2
                                      3
                                           5
                                                    1
       1
           1
              1
                  0
                     0
                                               4
## 21
       1
           1
              1
                  0
                     0
                        1 17925
                                  2
                                      4
                                           5
                                               3
                                                   1
                                           2
                                                   5
## 22
        1
           1
              0
                  0
                     0
                        1 17921
                                   3
                                      1
                                               4
## 23
                     0
                        4 17907
                                  1
                                      2
                                           3
                                               4
                                                   5
       1
           1
              1
                  1
                       2 17890
                                  1
                                      2
                                                   5
## 24
       1
           1
              1
                  0
                     0
                                           3
                                               4
## 25
       1
           1
                 0
                     0 4 17834
                                  1
                                      2
                                           3
                                               4
                                                   5
              1
              1 0 0 4 17834 2
## 26 1
           1
                                               4
                                                    1
```

```
## 27 1 1 1 0 0 4 17834 5
                                   3
                                             1
                                                 2
## 28
       1
          1
              0
                 0
                    0 3 17812
                                 3
                                         5
                                             4
                                                 2
                                    1
              0
                    0
                       3 17812
                                             5
                                                 2
                       3 17704
## 30
                    0
                                    2
                                         3
                                             4
                                                 5
       1
           1
              1
                 1
## 31
       1
          1
              1
                 0
                    0
                       3 17703
                                 3
                                    1
                                         4
                                             5
                                                 2
## 32
                 0
                    0
                       3 17691
                                 1
                                    2
                                         3
                                             4
                                                 5
       1
          1
              1
                 0
                    0
                       3 17691
                                         2
                                             4
                                                 5
## 33
       1
           1
              1
                       3 17691
                                 3
## 34
       1
           1
              1
                 0
                    0
                                    1
                                         4
                                             5
                                                 2
## 35
       1
          1
              1
                 1
                    1
                       3 17660
                                 1
                                    2
                                         3
                                             4
                                                 5
## 36
                                 2
                                                 5
       1
          1
              0
                 0
                    0
                       4 17551
                                    3
                                         4
                                             1
## 37
       1
          1
              0
                 0
                    0
                      4 17551
                                 3
                                    2
                                         4
                                             5
                                                 1
                       5 17460
                                         2
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## 40
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## 41
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## 42
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## 44
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## 45
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## 46
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## 47
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## [1] "Geração:"
## [1] 3
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                             V7 V8 V9 V10 V11 V12
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## 2
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## 3
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## 4
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## 5
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## 6
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## 7
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## 8
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## 9
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## 11
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## 12
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## 27 1 1 0 0 0 1 17921 3 1
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## 39
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## 47
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## 49
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## 50
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## [1] "Geração:"
## [1] 4
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                              V7 V8 V9 V10 V11 V12
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## 3
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## 4
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## 5
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## 10
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## 11
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## 13
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## 14
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## 15
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## 17
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## 19
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## 21
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## 22
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## 23
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## 24
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          1 1 0 0 1 17925 5
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       1 1 1 0 0 1 17925
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## 32
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## 33
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## 34
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##
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## 36
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## 37
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## 38
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##
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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## 47
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## 48
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## 49
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## 50
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## [1] "Geração:"
## [1] 5
##
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      V1 V2 V3 V4 V5 V6
## 1
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## 2
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## 3
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## 4
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## 5
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## 6
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## 7
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## 8
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## 9
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## 11
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## 17
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## 18
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## 19
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## 22
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## 25
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## 26
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## 27
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## 28
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              1 0 0 1 17925
## 29 1
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## 33
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## 34
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## 35
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##
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## 37
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## 38
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## 39
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                       1 17925
                                  4
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                                          3
## 40
       1
           1
              0
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                       1 17921
                                  3
                                     1
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                                              4
                                                  5
                        4 17907
## 41
                                     2
                                              4
                                                  5
       1
           1
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                                          3
                        2 17901
## 42
       1
           1
              0
                 0
                    0
                                 1
                                     3
                                          5
                                              2
                                                  4
                        2 17890
                                     2
                                                  5
## 43
       1
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              1
                 0
                    0
                                 1
                                          3
                                              4
                 0
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                        2 17890
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                                     5
                                          3
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## 44
       1
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                                              1
## 45
       1
           1
              1
                 0
                    0
                        2 17890
                                  1
                                     2
                                          3
                                              5
                                                  4
## 46
                 0
                    0
                        2 17890
                                 3
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                                              5
                                                  2
       1
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                                          4
## 47
       1
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                    0 2 17890
                                     3
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## 48
                    0 2 17890
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## 49
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                    0 2 17890
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                                    4
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                                              3
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## 50
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          1 1 0
                    0 2 17890
                                 2
                                    4
                                          1
                                              5
                                                  3
## [1] "Geração:"
## [1] 6
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
          1 0 0 0 4 18550
                                    3
       1
                                 1
                                          4
                                              5
                                                  2
## 2
       1
           1
              0
                 0
                    0
                       4 18550
                                  3
                                     1
                                              2
                                                  5
## 3
              0
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                    0
                       4 18550
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                                              5
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       1
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                                     1
## 4
                        5 18101
                                          3
                                              4
                                                  5
       1
           1
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                 1
                    1
                                 1
                                     2
                        5 18073
                                                  5
## 5
                    0
                                     2
                                          3
                                              4
       1
           1
              1
                 1
                                 1
## 6
           1
              1
                     1
                       1 18011
                                 1
                                     2
                                          3
                                              4
                                                  5
       1
                 1
## 7
       1
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                    0
                        5 18009
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                                              4
                                                  5
## 8
       1
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                    0
                        5 18009
                                  3
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                                                  2
                                     2
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## 9
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                       5 18009
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                                              1
## 10
                    0 5 18009
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## 11
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                        5 18009
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## 12
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                    0 5 18009
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## 13
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## 14
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## 15
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## 16
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## 17
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## 18
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## 20
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                        2 17993
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## 21
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## 22
                    0
                        1 17980
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## 23
       1
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                    1
                        4 17980
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## 24
                        5 17979
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## 25
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                        5 17979
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                        2 17965
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## 26
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## 27
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## 28
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## 29
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                 0 0 5 17931
                                 3
                                    1
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## 30 1 1 0 0 0 5 17931 3
                                              2
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## 31 1 1 0 0 0 5 17931 3
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## 32
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                    0 5 17931
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                    0
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                      5 17931
## 34
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## 35
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## 36
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## 37
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## 38
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## 39
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## 40
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       1
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                    0 1 17925
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## 41
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                       1 17925
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## 42
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## 43
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                    0
                      1 17925
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## 44
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## 45
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## 46
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                    0
                       1 17925
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## 47
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       1
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## 48
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                    0 1 17921
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## 49
       1 1 0 0 0 1 17921
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## 50
       1
          1 1 1
                    0 4 17907
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                                                 5
## [1] "Geração:"
## [1] 7
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
       1
             0 0 0 4 18550
                                 1
                                    3
                                         4
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          1
## 2
                    0 4 18550
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          1
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                 0
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                                    1
                    0 4 18550
## 3
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                                                 2
## 4
                       5 18101
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                                                 5
       1
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## 5
                    0
                       5 18073
                                    2
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## 6
                       1 18011
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## 7
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                    0
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## 8
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## 9
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## 10
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                    0 5 18009
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## 11
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## 12
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## 13
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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                       5 18009
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## 22
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                                         1
                       2 17993
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## 23
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                                                 5
## 24
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## 25
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## 26
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                       5 17979
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## 27
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## 28
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## 29
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                    0 5 17959
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## 30
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                                                 4
          1 0 0 0 5 17931 3
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## 31 1
                                         2
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## 32 1 1 0 0 0 5 17931 3
                                    1
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                                                  5
## 33
       1
           1
                    0 5 17931
                                 3
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                                              2
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              0
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                                     1
## 34
                    0
                       5 17931
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## 35
                 0
                    0
                       5 17931
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       1
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## 36
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                        5 17931
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## 37
                    0
                      1 17925
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                    0
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## 38
       1
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                       1 17925
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## 39
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                       1 17925
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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                       1 17925
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                       1 17925
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## 46
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## 47
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                       1 17925
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                    0 1 17925
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## 48
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## 49
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                    0 1 17925
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## 50 1 1 1 0
                    0 1 17925
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                                         1
## [1] "Geração:"
## [1] 8
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
                                              5
## 1
           1
              0 0 0 4 18550
                                  1
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       1
## 2
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                       4 18550
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       1
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                    0 4 18550
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## 3
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## 4
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                    1 5 18101
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## 5
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## 6
                       1 18011
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## 7
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## 8
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## 9
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## 10
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## 11
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## 12
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## 13
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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                        2 17993
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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                      5 17959
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## 31
       1
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              0
                 0 0 5 17931
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                                    1
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## 32 1 1 0 0 0 5 17931 3
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                                    1
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0 0 0 5 17931 3
      1 1
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## 34
       1
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                    0 5 17931
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                                                   2
              0
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                        5 17931
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                       5 17931
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## 36
                  0
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       1
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## 37
       1
           1
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                        1 17925
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                                                   5
## 38
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                       1 17925
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## 39
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                        1 17925
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## 40
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## 41
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                        1 17925
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## 42
       1
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## 43
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                        1 17925
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                                                   3
                        1 17925
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## 44
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## 45
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                        1 17925
                                  2
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                                          3
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## 46
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                        1 17925
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## 47
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## 48
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                        1 17925
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                    0 1 17925
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                                                   4
## 49
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              1
                                  1
## 50
      1 1 1
                 0 0 1 17925
                                                   4
## [1] "Geração:"
## [1] 9
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
                 0
                    0
                        4 18550
                                  1
                                      3
                                               2
                     0
                        4 18550
                                   3
                                                   5
## 2
       1
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                                      1
                                           4
           1
## 3
       1
                  0
                     0
                        4 18550
                                   3
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                                                   2
           1
              0
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                                          4
                       4 18550
## 4
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       1
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                                          5
## 5
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                        5 18101
                                  1
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                                          3
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                                                   5
## 6
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                        5 18073
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## 7
                        1 18011
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                        5 18009
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## 8
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        1
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## 9
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                        5 18009
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## 10
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                        5 18009
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## 11
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                        5 18009
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## 12
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                        5 18009
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## 13
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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                        4 17980
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## 27
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## 28
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                        2 17965
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## 29
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## 30
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                        5 17959
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## 31
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                       5 17959
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## 32
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                       5 17931
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              0 0 0 5 17931
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## 33 1
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1 1 0 0 0 5 17931 3
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## 35
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                    0 5 17931
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## 37
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## 39
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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                       1 17925
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## 47
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## 48
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## 49
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## 50
                   0 1 17925
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## [1] "Geração:"
## [1] 10
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
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                       4 18550
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## 2
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## 3
                        4 18550
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## 4
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                        4 18550
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## 5
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## 6
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## 7
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## 8
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## 9
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## 10
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## 11
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## 12
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## 13
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## 14
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## 15
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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                        2 17993
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## 25
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## 26
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## 27
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## 28
                        5 17979
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## 29
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                        5 17979
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## 30
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## 31
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                        5 17959
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## 32
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                    0
                      5 17959
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## 33
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                 0 0 5 17959
                                  3
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                                                  2
              0 0 0 5 17931 3
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## 34 1 1
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1 1
              0 0 0 5 17931
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## 36
       1
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                    0 5 17931
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                        5 17931
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                        5 17931
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## 38
              0
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## 39
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                        5 17931
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## 40
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## 41
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                        1 17925
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## 42
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## 43
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                        1 17925
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## 44
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                        1 17925
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## 45
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                        1 17925
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                        1 17925
## 46
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## 47
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## 48
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## 49
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## 50
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## [1] "Geração:"
## [1] 11
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
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                        4 18550
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## 2
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                        4 18550
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## 3
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                        4 18550
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## 4
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                        4 18550
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## 5
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                        4 18550
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## 6
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                        5 18101
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## 7
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                        5 18073
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## 8
                        1 18011
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## 9
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## 10
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## 11
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                        5 18009
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## 12
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## 13
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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                        1 17980
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## 29
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## 30
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                        5 17979
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## 31
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                        5 17979
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## 32
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## 33
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## 34
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                    0 5 17959
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          1 1 0 0 5 17959
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## 35
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## 36
      1 1 0 0 0 5 17931 3
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## 37
       1
                    0 5 17931
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                       5 17931
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## 39
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                       5 17931
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## 40
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## 41
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                        5 17931
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## 42
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## 43
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## 44
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              1
                 0
                     0
                        1 17925
                                  1
                                     3
                                          2
                                              4
                                                   5
                                              5
                                                   3
## 45
       1
           1
              1
                 0
                     0
                       1 17925
                                  4
                                     1
                                          2
## 46
       1
          1
              1
                 0
                     0
                       1 17925
                                  2
                                     3
                                          5
                                              4
                                                   1
## 47
                        1 17925
                                  2
                                          5
       1
           1
              1
                 0
                     0
                                     4
                                              3
                                                   1
                                                   2
## 48
       1
          1
              1
                 0
                    0 1 17925
                                  5
                                     3
                                          4
                                              1
                                  2
                                              5
                                                   3
## 49
       1
           1
              1
                 0
                    0 1 17925
                                    4
## 50
      1 1 1 0
                    0 1 17925
                                 3 1
                                              5
                                                   2
## [1] "Geração:"
## [1] 12
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
             0 0
                   0 4 18550
                                     3
       1
           1
                                 1
                                          4
                                              5
                                                   2
                                              2
## 2
       1
              0
                 0
                    0
                       4 18550
                                  3
                                          4
                                                   5
                       4 18550
## 3
       1
           1
              0
                 0
                     0
                                  3
                                     1
                                          4
                                              5
                                                   2
## 4
              0
                 0
                     0
                        4 18550
                                              2
                                                   4
           1
                                          5
                     0
                        4 18550
                                  3
                                                   5
## 5
           1
              0
                 0
                                     1
                                          2
                                              4
       1
## 6
       1
           1
              0
                 0
                     0
                        4 18550
                                  1
                                     3
                                          2
                                              5
                                                   4
                                                   5
## 7
       1
           1
              1
                 1
                     1
                        5 18101
                                  1
                                     2
                                          3
                                              4
## 8
       1
           1
              1
                 1
                     0
                        5 18073
                                  1
                                     2
                                          3
                                              4
                                                   5
## 9
                        1 18011
                                     2
                                          3
                                              4
                                                   5
       1
           1
              1
                 1
                     1
                                  1
## 10
                     0
                        5 18009
                                     2
                                          3
                                              4
                                                   5
       1
           1
              1
                 0
                                  1
## 11
                        5 18009
                                                   2
                 0
                     0
                                  3
                                              5
       1
           1
              1
                                     1
                                          4
## 12
       1
           1
              1
                 0
                     0
                        5 18009
                                  4
                                     2
                                          3
                                                   5
                                              1
## 13
       1
           1
              1
                 0
                     0
                        5 18009
                                  5
                                     2
                                          1
                                              3
                                                   4
## 14
       1
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                 0
                     0
                        5 18009
                                  4
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                                          2
                                              5
                                                   3
## 15
       1
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                     0
                       5 18009
                                     5
                                          3
                                              4
                                                   1
## 16
                       5 18009
                                  2
                                     5
                                                   4
                 0
                     0
                                          3
       1
           1
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                                              1
## 17
       1
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              1
                 0
                     0
                        5 18009
                                  4
                                     1
                                          3
                                              5
                                                   2
## 18
                 0
                     0
                       5 18009
                                  2
                                     4
                                          5
                                              3
       1
           1
              1
                                                   1
## 19
              1
                 0
                     0
                       5 18009
                                     3
                                          4
                                              1
                                                   2
## 20
                 0
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                        5 18009
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                                          3
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                                                   4
       1
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## 21
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              1
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                     0
                        5 18009
                                  3
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                                          1
                                              2
                                                   5
                                                   4
## 22
                    0 5 18009
                                  3
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                                              2
       1
           1
              1
                 0
                                          1
## 23
                     0
                        5 18009
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       1
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                                     3
## 24
                 0
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                        5 18009
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                                          5
                                              4
                                                   1
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              1
## 25
                     0
                        5 18009
                                              5
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       1
           1
              1
                 0
                                  2
                                     4
                                          1
## 26
                        5 18009
                                              2
                                                   4
                 0
                     0
                                  5
                                     3
       1
           1
              1
                                          1
                     0
                        5 18009
                                              4
                                                   2
## 27
       1
           1
              1
                 0
                                  3
                                     1
                                          5
                        2 17993
## 28
                     1
                                     2
                                              4
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       1
           1
              1
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                                  1
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                                              4
                                                   5
## 29
       1
           1
              1
                 1
                     0
                        1 17980
                                  1
                                     2
                                          3
                                     2
                                              4
                                                   5
## 30
       1
           1
              1
                 1
                     1
                        4 17980
                                  1
                                          3
## 31
       1
           1
              1
                 0
                     0
                        5 17979
                                  3
                                     1
                                          4
                                              5
                                                   2
                                              2
## 32
       1
           1
              1
                 0
                     0
                        5 17979
                                  3
                                     4
                                          1
                                                   5
## 33
                 0
                     0
                        5 17979
                                          3
                                              5
                                                   2
       1
           1
              1
                                  1
                                     4
                       2 17965
                                     2
                                                   5
## 34
       1
           1
              1
                 1
                     0
                                          3
                                              4
## 35
       1
           1
                 0
                    0 5 17959
                                  3
                                     5
                                              2
                                                   4
              1
                                          1
          1 1 0 0 5 17959 5
                                              2
## 36 1
                                     3
                                                   4
```

```
## 37 1 1 1 0 0 5 17959 3 1
                                         5
                                             4
                                                 2
## 38
       1
          1
             0
                0
                   0 5 17931
                                 3
                                         2
                                             5
                                                 4
                                    1
              0
                    0
                      5 17931
                                 3
                                         4
                                             2
                                                 5
                                             2
                                                 4
## 40
                 0
                    0
                      5 17931
                                 3
                                         5
       1
          1
              0
                                    1
## 41
       1
          1
              0
                 0
                    0
                       5 17931
                                 3
                                    1
                                         4
                                             5
                                                 2
                 0
                    0
                      5 17931
                                         2
                                             5
                                                 4
## 42
       1
          1
              0
                                 1
                                    3
                    0
                       5 17931
                                         2
                                             4
                                                 5
## 43
       1
          1
              0
                 0
                                    3
                    0 5 17931
## 44
       1
          1
              0
                 0
                                 1
                                    3
                                         5
                                             4
                                                 2
## 45
       1
          1
             1
                 0
                    0
                       1 17925
                                 1
                                    2
                                         3
                                             4
                                                 5
                                             4
                                                 5
## 46
       1
          1
             1
                 0
                    0
                      1 17925
                                 1
                                    3
                                         2
## 47
       1
          1
             1
                 0
                    0 1 17925
                                    1
                                         2
                                             5
                                                 3
                                 2
## 48
                    0 1 17925
                                    3
                                             4
       1
          1
             1
                 0
                                         5
                                                 1
## 49
       1 1
             1
                0 0 1 17925
                                2
                                   4
                                         5
                                             3
                                                 1
      1 1 1 0 0 1 17925
                                5 3
                                                 2
## 50
                                             1
## [1] "Geração:"
## [1] 13
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
          1 0 0 0 4 18550
                                1
                                    3
                                         4
                                             5
                                                 2
             0 0 0 4 18550
## 2
                                 3
                                             2
                                                 5
       1
          1
                                    1
                                         4
                                                 2
## 3
       1
          1
              0
                 0
                    0
                       4 18550
                                 3
                                    1
                                         4
                                             5
                      4 18550
## 4
       1
          1
             0
                 0
                    0
                                 1
                                    3
                                        5
                                             2
                                                 4
## 5
       1
          1
              0
                 0
                    0
                       4 18550
                                         2
                                             4
                                                 5
                    0 4 18550
## 6
                                                 4
          1
              0
                 0
                                 1
                                    3
                                         2
                                             5
       1
## 7
       1
          1
                    1
                       5 18101
                                 1
                                    2
                                         3
                                             4
                                                 5
             1
                 1
## 8
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                                                 5
       1
          1
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                 1
                    0 5 18073
                                 1
                                    2
                                         3
## 9
       1
          1
              1
                 1
                    1 1 18011
                                 1
                                    2
                                         3
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                                                 5
## 10
                 0
                    0
                       5 18009
                                    2
                                         3
                                             4
                                                 5
       1
          1
              1
                                 1
## 11
                 0
                    0
                       5 18009
                                 3
                                             5
                                                 2
       1
          1
              1
                                    1
                                         4
                       5 18009
                                                 5
## 12
                 0
                    0
                                4
                                    2
                                         3
       1
          1
              1
                                             1
## 13
       1
          1
              1
                 0
                    0
                       5 18009
                                 5
                                    2
                                             3
                                                 4
                                         1
## 14
       1
          1
              1
                 0
                    0
                       5 18009
                                 4
                                    1
                                         2
                                             5
                                                 3
## 15
       1
          1
              1
                 0
                    0
                       5 18009
                                 2
                                    5
                                         3
                                             4
                                                 1
                                                 4
## 16
       1
          1
              1
                 0
                    0 5 18009
                                 2
                                    5
                                         3
                                             1
## 17
                    0 5 18009
                                             5
                                                 2
              1
                 0
                                 4
                                    1
                                         3
       1
          1
## 18
       1
          1
              1
                 0
                    0
                       5 18009
                                 2
                                    4
                                         5
                                             3
                                                 1
## 19
                 0
                    0 5 18009
                                 5
                                    3
                                        4
                                                 2
       1
          1
              1
                                             1
## 20
          1
              1
                 0
                    0
                      5 18009
                                    2
                                         3
                                             5
                                                 4
## 21
                 0
                    0
                      5 18009
                                 3
                                    4
                                             2
                                                 5
       1
          1
              1
                                         1
## 22
       1
          1
              1
                 0
                    0
                       5 18009
                                 3
                                    5
                                         1
                                             2
                                                 4
                                                 5
## 23
                    0 5 18009
                                    3
                                         2
                                             4
       1
          1
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                 0
                                 1
## 24
                    0 5 18009
                                    3
                                             4
                                                 1
       1
          1
              1
                 0
                                 2
                                         5
## 25
                 0
                    0
                      5 18009
                                 2
                                             5
                                                 3
       1
          1
              1
                                    4
                                        1
## 26
                    0
                       5 18009
                                             2
                                                 4
       1
          1
              1
                 0
                                 5
                                    3
                                        1
## 27
                       5 18009
                                             4
                                                 2
                 0
                    0
                                 3
                                    1
                                         5
       1
          1
              1
                    0
                       5 18009
                                             5
                                                 2
## 28
       1
          1
              1
                 0
                                 1
                                    4
                                         3
                       2 17993
                                    2
## 29
                    1
                                         3
                                             4
                                                 5
       1
          1
              1
                 1
                                 1
                                             4
                                                 5
## 30
       1
          1
              1
                 1
                    0
                       1 17980
                                 1
                                    2
                                         3
## 31
                                    2
                                             4
                                                 5
       1
          1
              1
                 1
                    1
                       4 17980
                                 1
                                         3
## 32
       1
          1
              1
                 0
                    0
                       5 17979
                                 3
                                    1
                                         4
                                             5
                                                 2
                                             2
## 33
       1
          1
              1
                 0
                    0
                       5 17979
                                 3
                                    4
                                         1
                                                 5
## 34
                 0
                    0
                       5 17979
                                    4
                                         3
                                             5
                                                 2
       1
          1
              1
                                 1
                    0 2 17965
                                    2
                                                 5
## 35
       1
          1
              1
                 1
                                 1
                                         3
                                             4
## 36
       1
          1
                 0 0 5 17959
                                 3 5
                                             2
                                                 4
              1
                                         1
## 37 1 1 1 0 0 5 17959 5 3
                                             2
                                         1
                                                 4
```

```
## 38
      1 1 1 0 0 5 17959 3
                                    1
                                          5
                                              4
                                                   2
## 39
       1
                 0
                    0 5 17931
                                  3
                                          2
                                              5
                                                   4
           1
              0
                                     1
                                              2
                     0
                       5 17931
                                  3
                                          4
                                                   5
                                              2
                                                   4
## 41
                 0
                     0
                       5 17931
                                  3
                                          5
       1
           1
              0
                                     1
## 42
       1
           1
              0
                 0
                     0
                        5 17931
                                  3
                                     1
                                          4
                                              5
                                                   2
                 0
                     0
                       5 17931
                                          2
                                              5
                                                   4
## 43
           1
              0
                                  1
                                     3
       1
                     0
                        5 17931
                                          2
                                              4
                                                   5
## 44
       1
           1
              0
                 0
                                  1
                                     3
                        5 17931
## 45
       1
           1
              0
                 0
                     0
                                  1
                                     3
                                          5
                                              4
                                                   2
## 46
       1
           1
              1
                 0
                     0
                        1 17925
                                  1
                                     2
                                          3
                                              4
                                                   5
                                              4
                                                   5
## 47
       1
           1
              1
                 0
                    0
                       1 17925
                                  1
                                     3
                                          2
## 48
       1
          1
              1
                 0
                    0 1 17925
                                  4
                                     1
                                          2
                                              5
                                                   3
                                  2
## 49
                 0 0 1 17925
                                     3
                                              4
       1
          1
              1
                                          5
                                                   1
                                  2
## 50
       1 1 1 0 0 1 17925
                                     4
                                          5
                                              3
                                                   1
## [1] "Geração:"
## [1] 14
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
          1
             0 0 0 4 18550
                                    3
                                          4
                                              5
                                                   2
       1
                                 1
## 2
                 0
                    0
                       4 18550
                                  3
                                              2
                                                   5
## 3
                    0 4 18550
                                              5
                                                   2
       1
           1
              0
                 0
                                  3
                                     1
                                          4
                                              2
## 4
       1
           1
              0
                 0
                     0
                        4 18550
                                  1
                                     3
                                          5
                                                   4
                       4 18550
## 5
       1
           1
              0
                 0
                     0
                                  3
                                     1
                                          2
                                              4
                                                   5
## 6
       1
           1
              0
                 0
                     0
                        4 18550
                                     3
                                          2
                                              5
                                                   4
## 7
                        5 18101
                                              4
                                                   5
           1
                     1
                                  1
                                     2
                                          3
       1
              1
                 1
## 8
       1
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                        5 18073
                                  1
                                     2
                                          3
                                              4
                                                   5
              1
                 1
## 9
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       1
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              1
                 1
                     1 1 18011
                                  1
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                                          3
## 10
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                        5 18009
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                                                   5
## 11
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                        5 18009
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                                                   2
       1
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## 12
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                        5 18009
                                     2
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       1
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                                              1
                        5 18009
## 13
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                                                   4
       1
           1
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                                          1
## 14
           1
              1
                 0
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                        5 18009
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                                     1
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       1
## 15
       1
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              1
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                        5 18009
                                  2
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                                          3
                                              4
                                                   1
## 16
       1
           1
              1
                 0
                     0
                        5 18009
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                                          3
                                              1
                                                   4
                                                   2
## 17
       1
           1
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                 0
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                       5 18009
                                     1
                                          3
                                              5
## 18
                       5 18009
                                  2
                                              3
                 0
                     0
                                     4
                                          5
       1
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## 19
       1
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                 0
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                        5 18009
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                                          4
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                                                   2
## 20
                 0
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                       5 18009
                                  1
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                                          3
                                              5
                                                   4
       1
           1
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## 21
       1
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              1
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                       5 18009
                                  3
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## 22
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                        5 18009
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## 23
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                        5 18009
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## 24
                    0 5 18009
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## 25
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                       5 18009
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       1
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                                          1
## 26
                 0
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                        5 18009
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                                     3
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                                                   4
       1
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              1
                                          1
## 27
                     0
                        5 18009
                                              4
                                                   2
       1
           1
              1
                 0
                                  3
                                     1
                                          5
## 28
                     0
                        5 18009
                                              5
                                                   2
                 0
                                     4
                                          3
       1
           1
              1
                                  1
                        2 17993
                                     2
                                              4
                                                   5
## 29
       1
           1
              1
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                                  1
                                          3
                                                   5
## 30
                     0
                        1 17980
                                     2
                                          3
                                              4
       1
           1
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                 1
                                  1
                                              4
                                                   5
## 31
       1
           1
              1
                 1
                     1
                        4 17980
                                  1
                                     2
                                          3
## 32
                        5 17979
                                  3
                                              5
                                                   2
       1
           1
              1
                 0
                     0
                                     1
                                          4
##
   33
       1
           1
              1
                 0
                     0
                        5 17979
                                  3
                                     4
                                          1
                                              2
                                                   5
                                                   2
## 34
       1
           1
              1
                 0
                     0
                        5 17979
                                  1
                                     4
                                          3
                                              5
## 35
                     0
                        2 17965
                                     2
                                          3
                                              4
                                                   5
       1
           1
              1
                 1
                                  1
                                  3
                                              2
                                                   4
## 36
       1
           1
              1
                 0
                     0
                       5 17959
                                     5
                                          1
## 37
       1
           1
                 0
                    0 5 17959
                                  5
                                     3
                                              2
                                                   4
              1
                                          1
## 38 1 1 1 0 0 5 17959
                                 3
                                                   2
                                     1
                                          5
                                              4
```

```
## 39
       1 1 0 0 0 5 17931 3
                                          2
                                              5
                                                   4
                                    1
## 40
       1
                    0 5 17931
                                  3
                                          4
                                              2
                                                   5
           1
              0
                 0
                                     1
                                              2
                    0
                       5 17931
                                  3
                                                   4
## 42
                 0
                    0
                       5 17931
                                  3
                                              5
                                                   2
       1
           1
              0
                                     1
                                          4
## 43
       1
           1
              0
                 0
                    0
                        5 17931
                                  1
                                     3
                                          2
                                              5
                                                   4
                 0
                    0
                       5 17931
                                          2
                                              4
                                                   5
## 44
           1
              0
                                  1
                                     3
       1
                 0
                    0
                        5 17931
                                                   2
## 45
       1
           1
              0
                                  1
                                     3
                                          5
                                              4
## 46
       1
           1
              1
                 0
                    0
                       1 17925
                                  1
                                     2
                                          3
                                              4
                                                   5
## 47
       1
           1
              1
                 0
                    0
                        1 17925
                                  1
                                     3
                                          2
                                              4
                                                   5
                                  4
                                              5
                                                   3
## 48
       1
          1
              1
                 0
                    0 1 17925
                                     1
                                          2
## 49
       1 1
              1
                 0
                    0 1 17925
                                  2
                                    3
                                          5
                                              4
                                                   1
                    0 1 17925
                                  2
## 50
                                     4
                                          5
                                              3
       1 1 1
                 0
                                                   1
## [1] "Geração:"
## [1] 15
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
       1
           1
             0 0 0 4 18550
                                  1
                                     3
                                          4
                                              5
                                                   2
## 2
                0 0 4 18550
                                  3
                                              2
                                                   5
       1
           1
              0
                                     1
                                          4
                                              5
## 3
       1
           1
              0
                 0
                    0
                       4 18550
                                                   2
                                     1
## 4
                       4 18550
                                              2
                                                   4
       1
           1
              0
                 0
                    0
                                  1
                                     3
                                          5
## 5
       1
           1
              0
                 0
                    0
                        4 18550
                                  3
                                     1
                                          2
                                              4
                                                   5
                       4 18550
## 6
       1
           1
              0
                 0
                    0
                                  1
                                     3
                                          2
                                              5
                                                   4
## 7
       1
           1
              0
                 0
                    0
                        4 18550
                                  3
                                              2
                                                   4
                                     1
                                          5
## 8
                        5 18101
                                                   5
           1
                    1
                                  1
                                     2
                                          3
                                              4
       1
              1
                 1
## 9
       1
           1
                    0
                        5 18073
                                  1
                                     2
                                          3
                                              4
                                                   5
              1
                 1
## 10
                                              4
                                                   5
       1
           1
              1
                 1
                    1 1 18011
                                  1
                                     2
                                          3
## 11
       1
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              1
                 0
                    0
                        5 18009
                                  1
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                                              4
                                                   5
## 12
                 0
                    0
                        5 18009
                                  3
                                              5
                                                   2
       1
           1
              1
                                     1
                                          4
## 13
                 0
                    0
                        5 18009
                                     2
                                          3
                                                   5
       1
           1
              1
                                  4
                                              1
                        5 18009
## 14
                 0
                    0
                                  5
                                     2
                                              3
                                                   4
       1
           1
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                                          1
## 15
           1
              1
                 0
                    0
                        5 18009
                                  4
                                     1
                                          2
                                              5
                                                   3
       1
## 16
       1
           1
              1
                 0
                    0
                        5 18009
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                                              4
                                                   1
## 17
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                 0
                    0
                        5 18009
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                                          3
                                              1
                                                   4
                                                   2
## 18
       1
           1
              1
                 0
                    0
                       5 18009
                                     1
                                          3
                                              5
## 19
                       5 18009
                                  2
                                              3
                 0
                    0
                                     4
                                          5
       1
           1
              1
                                                   1
## 20
       1
           1
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                 0
                    0
                        5 18009
                                  5
                                     3
                                          4
                                              1
                                                   2
## 21
                 0
                    0
                       5 18009
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                                          3
                                              5
                                                   4
       1
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## 22
       1
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                 0
                    0
                       5 18009
                                  3
                                     4
                                              2
                                                   5
## 23
                 0
                    0
                        5 18009
                                  3
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                                              2
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       1
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                                          1
## 24
       1
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                    0
                        5 18009
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                                          2
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                                                   5
## 25
                    0 5 18009
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       1
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## 26
                    0
                       5 18009
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       1
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              1
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                                          1
## 27
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                        5 18009
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                                              2
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       1
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## 28
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                        5 18009
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       1
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##
                        5 18009
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                                                   2
   29
                 0
                    0
                                     4
                                          3
       1
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                                  1
                        2 17993
                                     2
                                              4
                                                   5
## 30
       1
           1
              1
                 1
                    1
                                  1
                                          3
                                                   5
## 31
                    0
                        1 17980
                                     2
                                          3
                                              4
       1
           1
              1
                 1
                                  1
                                              4
                                                   5
## 32
       1
           1
              1
                 1
                    1
                        4 17980
                                  1
                                     2
                                          3
## 33
                        5 17979
                                  3
                                              5
                                                   2
       1
           1
              1
                 0
                    0
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                                          4
##
   34
       1
           1
              1
                 0
                    0
                        5 17979
                                  3
                                     4
                                          1
                                              2
                                                   5
                                                   2
## 35
       1
           1
              1
                 0
                    0
                        5 17979
                                  1
                                     4
                                          3
                                              5
## 36
                    0
                        2 17965
                                     2
                                          3
                                              4
                                                   5
       1
           1
              1
                 1
                                  1
                                  3
                                              2
                                                   4
## 37
       1
           1
              1
                 0
                    0
                       5 17959
                                     5
                                          1
## 38
           1
                 0
                    0 5 17959
                                  5
                                     3
                                              2
                                                   4
       1
              1
                                          1
          1 1 0 0 5 17959
                                 3
                                                   2
## 39 1
                                     1
                                          5
                                              4
```

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## 40
       1 1 0 0 0 5 17931 3
                                    1
                                          2
                                               5
                                                   4
## 41
       1
                 0
                    0 5 17931
                                  3
                                          4
                                               2
                                                   5
           1
              0
                                     1
                                               2
                     0
                       5 17931
                                  3
                                                   4
                       5 17931
## 43
              0
                 0
                     0
                                  3
                                          4
                                               5
                                                   2
       1
           1
                                      1
## 44
       1
           1
              0
                 0
                     0
                        5 17931
                                  1
                                      3
                                          2
                                               5
                                                   4
                 0
                     0
                       5 17931
                                  1
                                     3
                                          2
                                               4
                                                   5
## 45
       1
           1
              0
                 0
                     0
                        5 17931
                                      3
                                               4
                                                   2
## 46
       1
           1
              0
                                          5
## 47
       1
           1
              1
                 0
                     0
                        1 17925
                                  1
                                      2
                                          3
                                               4
                                                   5
## 48
       1
           1
              1
                 0
                     0
                        1 17925
                                  1
                                      3
                                          2
                                               4
                                                   5
                                  4
                                               5
                                                   3
## 49
       1 1
              1
                 0 0 1 17925
                                     1
                                          2
## 50 1 1 1 0 0 1 17925
                                  2
                                      3
                                                   1
## [1] "Geração:"
## [1] 16
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
                0 0 4 18550
                                     3
                                          4
                                               5
                                                   2
       1
           1
              0
                                  1
                                               2
## 2
        1
           1
              0
                 0
                     0
                        4 18550
                                  3
                                      1
                                          4
                                                   5
## 3
                     0
                       4 18550
                                  3
                                               5
                                                   2
       1
           1
              0
                 0
                                      1
                                          4
                                               2
## 4
       1
           1
              0
                 0
                     0
                       4 18550
                                                   4
## 5
                       4 18550
                                  3
                                          2
                                               4
                                                   5
       1
           1
              0
                 0
                     0
                                     1
## 6
       1
           1
              0
                 0
                     0
                        4 18550
                                  1
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                                          2
                                               5
                                                   4
                        4 18550
## 7
       1
           1
              0
                 0
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                                     1
                                          5
                                               2
                                                   4
## 8
        1
           1
                     1
                        5 18101
                                      2
                                          3
                                               4
                                                   5
              1
                 1
                        5 18073
## 9
                     0
                                      2
                                               4
                                                   5
        1
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                                  1
                                          3
                 1
## 10
       1
           1
              1
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                        1 18011
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                                          3
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                                                   5
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## 11
                                               4
       1
           1
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                 0
                     0
                        5 18009
                                  1
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                                          3
## 12
       1
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                 0
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                        5 18009
                                  3
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                                                   2
## 13
                 0
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                        5 18009
                                  4
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                                                   5
       1
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## 14
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                        5 18009
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       1
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                                          1
                        5 18009
                                          2
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                                                   3
## 15
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                                  4
       1
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              1
                                     1
## 16
       1
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                 0
                     0
                        5 18009
                                  2
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                                          3
                                               4
                                                   1
## 17
        1
           1
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                     0
                        5 18009
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                                               1
                                                   4
## 18
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                        5 18009
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                                          3
                                               5
                                                   2
## 19
       1
           1
              1
                 0
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                       5 18009
                                  2
                                     4
                                          5
                                               3
                                                   1
## 20
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                       5 18009
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           1
## 21
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                        5 18009
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                                                   4
## 22
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                       5 18009
                                  3
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                                               2
                                                   5
       1
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## 23
       1
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              1
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                     0
                       5 18009
                                  3
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                                          1
                                               2
                                                   4
## 24
                 0
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                        5 18009
                                  1
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                                          2
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                                                   5
       1
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## 25
        1
           1
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                     0
                        5 18009
                                  2
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                                               4
                                                   1
                     0 5 18009
                                                   3
## 26
                 0
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                                      4
                                               5
       1
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                                          1
## 27
                 0
                     0
                        5 18009
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                                                   4
       1
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              1
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                                          1
## 28
                 0
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                        5 18009
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                                               4
                                                   2
       1
           1
              1
                                     1
##
                     0
                        5 18009
                                               5
                                                   2
   29
       1
           1
              1
                 0
                                  1
                                      4
                                          3
## 30
                     0
                        5 18009
                                               5
                                                   4
           1
                 0
                                  2
                                      3
       1
              1
                                          1
                        2 17993
                                      2
                                          3
                                               4
                                                   5
## 31
       1
           1
              1
                 1
                     1
                                  1
                                      2
                                                   5
## 32
                     0
                        1 17980
                                  1
                                          3
                                               4
       1
           1
              1
                 1
                                               4
                                                   5
## 33
       1
           1
              1
                 1
                     1
                        4 17980
                                  1
                                      2
                                          3
##
                        5 17979
                                  3
                                               5
                                                   2
   34
       1
           1
              1
                 0
                     0
                                      1
                                          4
##
   35
       1
           1
              1
                 0
                     0
                        5 17979
                                  3
                                      4
                                          1
                                               2
                                                   5
                                               5
                                                   2
## 36
        1
           1
              1
                 0
                     0
                        5 17979
                                  1
                                      4
                                          3
## 37
                 0
                     0
                        5 17979
                                  1
                                      3
                                          4
                                               5
                                                   2
       1
           1
              1
                       2 17965
                                      2
                                          3
                                               4
                                                   5
## 38
       1
           1
              1
                  1
                     0
                                  1
## 39
       1
           1
                 0
                    0 5 17959
                                  3
                                     5
                                               2
                                                   4
              1
                                          1
          1 1 0 0 5 17959 5
                                               2
## 40 1
                                     3
                                          1
                                                   4
```

```
## 41 1 1 1 0 0 5 17959 3
                                    1
                                         5
                                                  2
## 42
       1
           1
              0
                 0
                    0 5 17931
                                 3
                                         2
                                              5
                                                  4
                                     1
                                              2
                    0
                       5 17931
                                  3
                                              2
                                                  4
## 44
              0
                 0
                    0
                       5 17931
                                 3
                                         5
       1
           1
                                     1
## 45
       1
           1
              0
                 0
                    0
                        5 17931
                                  3
                                         4
                                              5
                                                  2
                 0
                    0
                      5 17931
                                         2
                                              5
                                                  4
## 46
       1
           1
              0
                                 1
                                     3
                 0
                    0
                       5 17931
                                         2
                                                  5
       1
           1
              0
                    0 5 17931
## 48
       1
           1
              0
                 0
                                 1
                                     3
                                         5
                                              4
                                                  2
                    0 1 17925
## 49
       1
          1
             1
                0
                                 1
                                     2
                                         3
                                              4
                                                  5
                0 0 1 17925
                                 1
                                                  5
## 50
       1 1 1
## [1] "Geração:"
## [1] 17
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
## 1
             0 0
                    0
                       4 18550
                                 1
                                    3
                                         4
                                                  2
## 2
                 0
                    0
                       4 18550
                                  3
                                              2
                                                  5
       1
              0
                                     1
## 3
       1
           1
              0
                 0
                    0
                        4 18550
                                  3
                                         4
                                              5
                                                  2
## 4
                 0
                    0
                       4 18550
                                              2
                                                  4
       1
           1
              0
                                  1
                                     3
                                         5
## 5
           1
                    0 4 18550
                                              4
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## 6
                 0
                    0 4 18550
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       1
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                                              5
## 7
       1
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                       4 18550
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                                              2
                                                  4
                    1 5 18101
## 8
       1
           1
              1
                 1
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                                     2
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## 9
           1
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                    0
                       5 18073
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                                                  5
## 10
                       1 18011
                                     2
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       1
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                                         3
                                              4
## 11
       1
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                    0
                        5 18009
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## 12
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       1
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                    0 5 18009
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                                         4
## 13
       1
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                      5 18009
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## 14
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                                                  4
       1
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                    0
                        5 18009
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## 15
       1
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                        5 18009
                                 2
## 16
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       1
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## 17
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                        5 18009
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                                              1
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## 18
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                    0
                        5 18009
                                 4
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                                                  2
## 19
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                        5 18009
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## 20
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                    0
                       5 18009
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## 21
                    0 5 18009
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## 22
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                        5 18009
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## 23
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## 24
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## 25
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                       5 18009
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       1
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## 26
       1
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                                         1
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                                                  3
                    0 5 18009
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## 27
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                                     3
                                              2
       1
           1
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                                         1
## 28
                 0
                    0 5 18009
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       1
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## 29
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       1
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##
                    0
                        5 18009
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   30
       1
           1
              1
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                                 2
                                     3
                                         1
## 31
                    0
                      5 18009
                                              5
                                                  2
           1
                 0
                                     3
                                         4
       1
              1
                                 1
                        2 17993
                                     2
                                              4
                                                  5
## 32
       1
           1
              1
                 1
                    1
                                         3
                                     2
                                                  5
## 33
           1
                    0
                       1 17980
                                 1
                                         3
                                              4
       1
              1
                 1
                                              4
                                                  5
## 34
       1
           1
              1
                 1
                    1
                        4 17980
                                 1
                                     2
                                         3
## 35
                        5 17979
                                  3
                                              5
                                                  2
       1
           1
              1
                 0
                    0
                                     1
                                         4
##
  36
       1
           1
              1
                 0
                    0
                       5 17979
                                  3
                                     4
                                         1
                                              2
                                                  5
                                                  2
## 37
       1
           1
              1
                 0
                    0
                        5 17979
                                  1
                                     4
                                         3
                                              5
## 38
                 0
                    0
                        5 17979
                                     3
                                         4
                                              5
                                                  2
       1
           1
              1
                                  1
                                              2
                                                  5
## 39
       1
           1
              1
                 0
                    0 5 17979
                                     3
                                         4
## 40
       1
           1
                 1
                    0 2 17965
                                 1
                                     2
                                         3
                                              4
                                                  5
              1
## 41 1 1 1 0 0 5 17959 3 5
                                              2
                                                  4
```

```
1 1 1 0 0 5 17959
                                  5
                                     3
                                               2
                                                    4
                                           1
## 43
       1
           1
              1
                     0 5 17959
                                   3
                                      1
                                           5
                                               4
                                                    2
                  0
                                               5
              0
                     0
                        5 17931
                                   3
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                                                    4
                        5 17931
                                               2
## 45
              0
                  0
                     0
                                   3
                                           4
                                                    5
       1
           1
                                      1
## 46
       1
           1
              0
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                     0
                        5 17931
                                   3
                                      1
                                           5
                                               2
                                                    4
                  0
                     0
                       5 17931
                                  3
                                           4
                                               5
                                                    2
## 47
       1
           1
              0
                                      1
                  0
                     0
                        5 17931
                                  1
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                                               5
                                                    4
## 48
       1
           1
              0
                     0 5 17931
## 49
       1
           1
              0
                  0
                                  1
                                      3
                                           2
                                               4
                                                    5
## 50
       1 1 0 0
                    0 5 17931
                                                4
                                                    2
## [1] "Geração:"
## [1] 18
                              V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
                                               5
## 1
           1
              0
                 0
                     0
                        4 18550
                                  1
                                     3
                                           4
                                                    2
       1
                                               2
## 2
                        4 18550
                                   3
                                                    5
                  0
                     0
                                      1
## 3
                     0
                        4 18550
                                   3
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        1
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              0
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## 4
        1
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                        4 18550
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## 5
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                        4 18550
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## 6
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                        4 18550
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## 7
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## 8
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                        5 18101
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## 9
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                        5 18073
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## 10
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                        1 18011
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## 11
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                        5 18009
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## 12
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## 13
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## 14
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                        5 18009
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## 15
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                        5 18009
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## 16
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## 17
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## 18
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## 19
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## 20
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##
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## 22
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## 23
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## 24
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## 25
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## 27
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## 28
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## 30
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   31
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## 32
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                        2 17993
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##
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## 34
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## 35
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                        4 17980
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##
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                        5 17979
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## 38
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                        5 17979
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## 39
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                        5 17979
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## 40
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                        5 17979
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## 41
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                        2 17965
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              1 0 0 5 17959
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## 42 1
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1 1 1 0 0 5 17959
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## 44
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                    0 5 17959
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                       5 17931
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## 46
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## 47
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                        5 17931
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## 48
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## 49
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                    0 5 17931
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## 50
       1 1 0 0
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## [1] "Geração:"
## [1] 19
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
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                       4 18550
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                                                   2
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                        4 18550
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## 2
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                                  3
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                                                   2
## 3
                        4 18550
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              0
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                                  3
## 4
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                        4 18550
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                                          5
## 5
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                        4 18550
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## 6
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## 7
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## 8
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## 9
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## 10
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## 11
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                        1 18011
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## 12
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## 13
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## 14
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## 15
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 31
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                        5 18009
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##
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                        5 18009
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##
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                        5 18009
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   33
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   34
                        2 17993
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##
       1
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## 35
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                        1 17980
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##
   36
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                        4 17980
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##
                        5 17979
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##
   38
       1
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                        5 17979
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## 39
        1
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                        5 17979
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## 40
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                        5 17979
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## 41
       1
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                       5 17979
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## 42
       1
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                 1
                    0 2 17965
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                                               4
                                                   5
## 43 1 1 1 0 0 5 17959
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## 44
        1 1 1 0 0 5 17959
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## 45
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                        5 17931
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## 47
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                        5 17931
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## 48
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## 49
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## 50
## [1] "Geração:"
## [1] 20
##
       V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
        1
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                        4 18550
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## 2
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                        4 18550
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        1
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## 3
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                         4 18550
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## 4
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## 5
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                         4 18550
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## 6
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                         4 18550
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## 7
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## 8
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## 9
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## 10
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## 11
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## 12
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## 14
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## 15
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## 16
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## 19
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## 21
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## 22
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## 23
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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##
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## 32
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                        1 17980
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## 36
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##
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## 38
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## 40
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## 41
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## 42
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## 43
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              1 0 0 5 17959 5
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## 44 1
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## 48
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## 49
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## 50
              0
                 0 0 5 17931
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       1
           1
## [1] "popsize = 50,ngeracoes=20,p_Cross=0.1,p_Mutacao=0.05"
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
             0 0 0 5 17102
                                  1 2
## 1
       1
           0
                                           3
                                                    5
       1
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                     0
                        5 18073
                                           3
                                                    5
                        5 17102
                                                    5
## 3
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                                      2
                                               4
        1
           0
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                                                    5
## 4
              1
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                        5 18009
                                  1
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                                               4
        1
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                        5 18073
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                                                    5
## 5
        1
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                                           3
## 6
              0
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                     0
                        4 16902
                                      2
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                                               4
                                                    5
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                        2 17890
## 7
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## 8
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                        1 17980
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## 9
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                        4 17907
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## 10
                        3 17660
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              1
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## 11
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                        3 17660
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                        4 17834
## 12
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## 13
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## 14
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## 15
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                        3 17691
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## 16
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## 18
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                        3 17660
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##
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## 20
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                        5 17182
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## 21
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                        2 17102
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## 22
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                        4 17834
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## 23
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##
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                        5 18101
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## 25
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## 27
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## 31
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##
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## 37
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##
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##
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##
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                        4 17907
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                                                    5
                        3 17691
                                      2
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## 41
           1
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                                               4
## 42
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                        3 17704
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                        2 17102
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## 43
       1
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## 44
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                     0
                        2 17102
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                                               4
                                                    5
           1 1 0 0 4 17834
## 45 1
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3 1

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## 46 1 0 0 0 0 1 17102 1 2
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## 47
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                   0 2 17890
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## 49
                0 0 1 17925
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       1 1
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## 50
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                    0 2 17102
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                                                 5
## [1] "Geração:"
## [1] 1
                            V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
## 1
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             0 0 0 4 18550
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                                                 5
## 2
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                1 1 5 18101
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                                         3
## 3
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                       5 18073
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## 4
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## 5
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## 6
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## 7
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## 8
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## 9
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## 10
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                                                 5
## 11
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## 12
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                    0
                       4 17834
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                                                 5
## 13
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                    0
                       3 17704
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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## 31
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## 32
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## 33
                      4 17907
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## 34
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                       2 17890
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## 35
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                       3 17704
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## 36
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                    0
                       2 17145
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## 37
       1
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                                                 1
                       3 17660
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## 38
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                       5 17182
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## 39
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                       5 17102
                                    2
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## 40
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## 41
       1
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                 0
                    0
                      4 17102
                                1
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                                                 5
                       2 17102
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## 42
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## 43
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                       1 17102
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## 44
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                      4 18550
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## 45
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                                             4
                                                 5
          0 0 0 0 5 17102 1
## 46 1
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## 47 1 1 1 1 0 5 18073 1 2
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## 48
       1 0 0 0
                   0 5 17102
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                                             4
                                                 5
      1 1 1 0 0 5 18009
                                 1
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                                             4
                                                 5
## 50 1 1 1 1 0 5 18073
                                                 5
                                1
                                         3
                                             4
## [1] "Geração:"
## [1] 2
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
## 1
       1
          1 0 0 0 4 18550
                                 3
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                                                 4
## 2
       1
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                       5 18101
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## 3
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## 4
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## 5
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## 6
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                       2 17993
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## 7
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                       1 17980
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## 8
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## 9
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## 10
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## 11
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## 12
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## 13
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                       3 17691
## 14
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## 15
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## 16
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## 17
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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## 31
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## 32
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## 33
                    0 5 18009
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       1
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## 34
                    1 2 17993
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## 35
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                       1 17980
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       1
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## 36
                    1 4 17980
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       1
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## 37
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                    0
                       1 17925
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                                                 5
## 38
       1
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                       4 17907
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                       2 17890
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## 39
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                       4 17834
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## 40
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## 41
                       3 17704
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## 42
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                       3 17691
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## 43
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## 44
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## 45
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## 46
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                0 0 5 17102
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          0 0 0 0 4 17102 1
## 47 1
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## 48 1 0 0 0 0 2 17102 1 2
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                                                  5
## 49 1 0 0 0 0 1 17102 1 2
                                             4
                                                  5
                                         3
## 50 1 1 0 0 0 1 15809
                                 5
## [1] "Geração:"
## [1] 3
##
                             V7 V8 V9 V10 V11 V12
      V1 V2 V3 V4 V5 V6
                      4 18550
                                 3
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                0
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                                         2
## 2
       1
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## 3
       1
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## 4
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## 5
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## 6
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## 7
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## 33
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## 39
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## 42
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## 43
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## 46
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## 47
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## 48 1 1 1 0 0 2 17145 3 5
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## 49 1 0 0 0 0 5 17102 1 2
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## 50 1 0 0 0 0 4 17102 1 2
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## [1] "Geração:"
## [1] 4
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
          1 0 0 0 4 18550 3
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## 2
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## 4
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## 5
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## 6
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## 7
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## 8
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## 10
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## 41
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## 47
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## 50 1 1 1 0 0 2 17145 3 5
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## [1] "Geração:"
## [1] 5
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
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## 6
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## 7
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## 33
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## 34
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## 40
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## 41
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## 42
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## 43
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## 44
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                        1 17980
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## 45
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## 46
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                        1 17925
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## 47
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                        2 17102
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## 48
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## 49
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          1 1 1 0 3 17704 1
## 50 1
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## [1] 7
##
       V1 V2 V3 V4 V5 V6
                               V7 V8 V9 V10 V11 V12
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## 41
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## 42
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## 43
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## 45
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## 46
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## 47
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                         4 15948
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## 48
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                         1 15809
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                         5 14342
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## 50
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## [1] "Geração:"
## [1] 8
```

```
##
      V1 V2 V3 V4 V5 V6
                              V7 V8 V9 V10 V11 V12
## 1
             0 0 0 4 18550
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## 2
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## 3
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## 4
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                        1 18011
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## 5
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                        5 18009
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## 6
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## 7
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## 8
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## 9
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## 10
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## 11
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##
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## 13
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## 14
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## 17
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## 20
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## 21
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## 24
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## 31
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## 32
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## 33
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## 34
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## 41
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## 43
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## 44
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## [1] "Geração:"
## [1] 9
                              V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
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## 10
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## 11
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## 32
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## 33
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## 34
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## 35
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## 36
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## 37
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## 38
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## 39
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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## 47
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## 48
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## 49
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## 50
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## [1] "Geração:"
## [1] 10
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
      1 1 0 0 0 4 18550 3 1
## 1
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```

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## 2
       1 1 1 1 1 5 18101 1 2
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## 3
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## 4
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## 5
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                    0 5 18009
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## 6
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## 7
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## 8
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## 9
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## 10
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## 11
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## 12
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## 13
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## 14
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                       4 17834
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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## 31
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## 32
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## 33
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## 34
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## 36
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## 37
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## 38
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## 39
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## 40
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## 41
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## 42
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## 43
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                    0
                       2 17102
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## 44
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## 45
          0
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                      1 17102
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                       5 17102
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## 46
       1
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                       3 17102
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## 47
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## 48
       1
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                   0 4 17102
                                        1
          0 0 0 0 1 17102 1 2
                                                3
## 49
      1
                                        5
                                            4
## 50 1 1 0 0 0 1 17059
                                1
                                        3
                                                5
## [1] "Geração:"
## [1] 11
                            V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
## 1
       1 1 0 0 0 4 18550 3 1
                                        2
                                            5
                                                4
       1 1 0 0 0 4 18550 3 1
                                            5
## 2
                                        4
                                                2
```

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## 3
       1 1 1 1 1 5 18101 1 2
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## 4
       1
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             1
                    0 5 18073
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                                                 5
                 1
                    1 1 18011
## 5
                                             4
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                       5 18009
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## 6
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       1
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## 7
       1
          1
              1
                 0
                    0
                       5 18009
                                 3
                                    5
                                         2
                                             4
                                                 1
## 8
                       2 17993
                                 1
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                                                 5
       1
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                                         3
## 9
                       1 17980
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## 10
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                       4 17980
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## 11
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## 12
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                      1 17925
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## 13
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                      4 17907
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                       2 17890
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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## 31
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## 32
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## 33
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## 34
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## 35
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## 36
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## 37
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## 38
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## 39
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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                      1 17102
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## 47
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                       3 17102
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## 48
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                0 0 4 17102
                                 5
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## 49
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                                         1
## 50
      1 0 0 0 0 1 17102
                                                 3
                                1
## [1] "Geração:"
## [1] 12
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
          1 0 0 0 4 18550 3 1
                                         2
                                             5
                                                 4
## 2
       1
             0 0 0 4 18550 3
                                    1
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                                                 2
          1
## 3
       1 1 1 1 1 5 18101 1 2
                                             4
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## 4
       1 1 1 1 0 5 18073 1 2
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## 5
       1
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                   1 1 18011
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## 6
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                      5 18009
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## 7
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                   0 5 18009
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       1
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## 8
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## 9
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                      1 17980
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       1
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## 10
                    1 4 17980
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## 11
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## 12
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## 13
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## 14
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                      4 17834
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## 15
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## 16
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## 17
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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## 28
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## 29
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## 30
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## 31
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## 32
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## 33
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## 34
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## 35
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                      4 17102
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## 36
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                    0 5 17102
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## 37
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                       2 17102
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## 38
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                       5 17102
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## 39
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       1
## 40
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                      4 17102
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## 41
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                   0 1 17102
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## 42
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                       1 17102
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## 43
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       1
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## 44
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                   0 3 17102
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## 45
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                       2 17102
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## 46
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## 47
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                       5 17102
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       1
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                   0 3 17102
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## 48
      1
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                                            1
                0 0 4 17102
                                5
                                   2
## 49
             0
                                            3
                                                4
       1
          0
                                        1
       1 0 0 0 0 1 17102 1
                                                3
## 50
## [1] "Geração:"
## [1] 13
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
##
## 1
             0 0 0 4 18550
                               3
                                  1
                                        2
                                            5
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          1
       1
                   0 4 18550
                                            5
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## 2
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                               3
                                   1
## 3
                1 1 5 18101
                                1
                                   2
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       1
          1
             1
## 4
       1 1 1 1 0 5 18073 1 2
                                        3
                                            4
                                                5
```

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## 5
       1 1 1 1 1 18011 1
                                    2
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## 6
       1
           1
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                 0
                    0 5 18009
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                                              4
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## 7
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                        2 17993
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## 8
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## 9
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                        1 17980
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## 10
                    1 4 17980
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## 11
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                        2 17965
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## 12
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## 13
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## 14
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## 15
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                       4 17834
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## 16
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                        4 17834
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## 17
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                        4 17834
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## 18
                        3 17704
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## 19
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                        3 17691
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## 20
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## 21
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                        3 17691
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## 22
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                       3 17660
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## 23
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                       5 17182
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## 24
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## 25
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## 26
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                        2 17145
## 27
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## 28
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## 29
                    0 4 17102
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## 30
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## 31
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  32
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                        2 17102
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## 33
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## 34
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                       4 17102
## 35
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## 36
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                        5 17102
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                       2 17102
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## 37
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## 38
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                      5 17102
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## 39
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                        1 17102
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## 40
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                       4 17102
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## 41
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                       1 17102
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## 42
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                       1 17102
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## 43
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                        3 17102
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## 44
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                    0
                       3 17102
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       1
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## 45
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                       2 17102
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## 46
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                                         4
                                              2
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       1
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                 0
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                        5 17102
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                                              3
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## 47
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           0
                                     1
                                         5
                    0
                       3 17102
                                 4
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## 48
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                                     3
                                         5
                                              1
       1
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                    0 4 17102
                                 5
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## 49
       1
           0
              0
                                         1
          0 0 0 0 1 17102 1
## 50
       1
                                         5
                                              4
                                                  3
## [1] "Geração:"
## [1] 14
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
       1
           1
             0
                0
                    0
                       4 18550
                                 3
                                    1
                                         2
                                              5
                                                  4
## 2
                    0 4 18550
                                 3
                                              5
                                                  2
       1
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              0
                 0
                                     1
                                         4
                    1 5 18101
                                     2
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                                                  5
## 3
       1
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                 1
                                 1
                                         3
## 4
           1
                 1
                    0 5 18073
                                 1
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                                              4
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       1
              1
## 5
          1 1 1 1 18011 1
       1
                                              4
                                                  5
```

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## 6
       1 1 1 0 0 5 18009
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                                         3
                                              4
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## 7
          1
                    0 5 18009
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                                         2
                                              4
       1
              1
                 0
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## 8
                       2 17993
                                              4
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## 9
                    0
                       1 17980
                                     2
                                         3
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       1
           1
              1
                 1
## 10
       1
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              1
                 1
                    1
                       4 17980
                                     2
                                         3
                                              4
                                                  5
## 11
                    0
                       2 17965
                                    2
                                              4
                                                  5
       1
           1
              1
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                                         3
## 12
                 0
                    0
                                     2
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       1
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              1
                       1 17925
                                         3
                                              4
## 13
       1
           1
              1
                 1
                    0
                       4 17907
                                 1
                                     2
                                         3
                                              4
                                                  5
## 14
       1
          1
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                 0
                    0
                       2 17890
                                 1
                                     2
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                                              4
                                                  5
## 15
                                              4
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       1
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                    0
                       4 17834
                                 1
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## 16
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## 17
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       1
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## 18
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## 19
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## 20
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## 21
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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                       2 17145
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## 28
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## 29
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## 30
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## 31
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## 32
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  33
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## 34
              0
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                    0
                       4 17102
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       1
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## 35
       1
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                    0
                       4 17102
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                                         4
                       5 17102
## 36
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## 37
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                    0
                       2 17102
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## 38
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                       5 17102
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                                              1
## 39
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       1
## 40
       1
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                       4 17102
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                                                  1
## 41
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                      1 17102
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## 42
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                       1 17102
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## 43
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                    0
                       3 17102
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## 44
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                       3 17102
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## 45
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                    0
                       2 17102
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## 46
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                      1 17102
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## 47
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                    0
                       5 17102
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       1
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                 0
                       3 17102
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## 48
       1
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                                     3
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                0 0 4 17102 5
                                              3
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## 49
          0
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      1
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## 50
      1 0 0 0
                    0 1 17102
                                                  3
## [1] "Geração:"
## [1] 15
##
                             V7 V8 V9 V10 V11 V12
      V1 V2 V3 V4 V5 V6
## 1
       1
           1
              0
                0
                   0 4 18550
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## 2
       1
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                       4 18550
                                 3
                                    1
                                         4
## 3
                       5 18101
                                    2
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           1
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                    1
                                 1
       1
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## 4
           1
                    0
                      5 18073
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                                         3
## 5
                    1 1 18011
                                 1
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       1
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          1 1 0 0 5 18009
## 6
       1
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                                              4
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## 7
       1 1 1 0 0 5 18009 3 5
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                                                1
## 8
       1
          1
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                   1 2 17993
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## 9
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                      1 17980
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## 10
                    1 4 17980
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## 11
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                       2 17965
                                   2
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## 12
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       1
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## 13
                    0
                      4 17907
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                                            4
                       2 17890
## 14
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## 15
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                      4 17834
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## 16
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## 17
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## 18
                       3 17704
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## 19
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## 20
                       3 17691
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## 21
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                       3 17691
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## 22
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## 23
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## 24
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## 25
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## 26
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## 27
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                       2 17145
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## 28
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                      5 17102
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                    0 4 17102
## 29
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## 30
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## 31
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## 32
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## 33
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       1
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                    0
                       4 17102
                                1
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                                                2
## 34
       1
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                                            2
                                                3
## 35
             0
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                    0
                      4 17102
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                                        4
       1
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## 36
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                    0
                       5 17102
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                       2 17102
## 37
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## 38
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                       5 17102
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## 39
       1
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                    0
                      1 17102
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                                            3
## 40
                      4 17102
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       1
## 41
       1
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                    0
                       1 17102
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                                                2
## 42
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                    0 1 17102
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## 43
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                    0
                      3 17102
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## 44
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                0
                    0 3 17102
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       1
## 45
       1
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                       2 17102
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                                   4
                                        2
                                            1
                                                5
## 46
             0
                0
                   0 1 17102 3
                                   5
                                        4
                                            2
                                                1
       1
          0
                0
                   0 5 17102
                                            3
                                                2
## 47
       1
          0
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                                   1
                                        5
## 48
             0
                0 0 3 17102
                                4
                                   3
                                        5
                                                2
       1
          0
                                            1
                0 0 4 17102 5
                                            3
                                                4
## 49
       1 0
             0
                                   2
                                        1
          0 0 0 0 1 17102 1
                                            4
                                                3
## 50
       1
                                        5
## [1] "Geração:"
## [1] 16
      V1 V2 V3 V4 V5 V6
                            V7 V8 V9 V10 V11 V12
##
          1 0 0 0 4 18550
                               3
                                        2
## 1
       1
                                  1
                                            5
                                                4
## 2
       1
          1
             0
                0 0 4 18550
                                3
                                   1
                                        4
                                            5
                                                2
                                                5
## 3
       1
          1
             1
                 1
                    1
                       5 18101
                                1
                                   2
                                        3
                                            4
## 4
                    0
                       5 18073
                                1
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          1
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       1
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                                                5
## 5
       1
          1
             1
                 1
                    1 1 18011
                                1
                                   2
                                        3
                                            4
## 6
          1
                0 0 5 18009
                                1
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                                                5
       1
             1
       1 1 1 0 0 5 18009 3 5
## 7
                                        2
                                            4
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```

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## 8
       1 1 1 1 1 2 17993 1
                                   2
                                         3
                                                 5
## 9
       1
          1
             1
                    0 1 17980
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                                                 5
                 1
                       4 17980
              1
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                       2 17965
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## 11
                    0
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       1
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                 1
## 12
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                    0
                       1 17925
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                                                 5
## 13
                    0
                      4 17907
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                                                 5
       1
          1
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                 0
                    0
                       2 17890
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## 14
       1
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                                             4
                       2 17890
## 15
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## 16
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## 17
                      4 17834
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       1
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## 18
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                    0
                      4 17834
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## 19
                       3 17704
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## 20
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## 21
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## 22
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## 23
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## 24
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## 27
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## 28
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## 29
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## 30
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## 36
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## 37
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## 38
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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## 47
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                0 0 5 17102
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## 48
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                                         5
## 49
       1 0 0 0 0 3 17102
                                 4
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                                                 2
          0 0 0
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                                             3
## 50
       1
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## [1] "Geração:"
## [1] 17
                             V7 V8 V9 V10 V11 V12
##
      V1 V2 V3 V4 V5 V6
             0 0 0 4 18550
## 1
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## 2
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## 3
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                       5 18073
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## 4
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## 5
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## 6
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## 7
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## 8
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## 10
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## 12
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## 13
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## 14
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## 15
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## 16
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## 17
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## 20
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## 27
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## 34
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## 38
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## 39
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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## 47
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## 48
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## 49
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## 50
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## [1] "Geração:"
## [1] 18
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
##
              0 0 0 4 18550
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## 1
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## 2
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## 3
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## 5
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## 11
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## 16
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## 17
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## 18
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## 21
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## 22
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## 24
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## 25
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## 31
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## 32
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## 33
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## 34
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                        3 17102
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## 35
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## 36
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## 37
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## 38
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## 39
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## 40
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## 41
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## 42
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## 43
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## 44
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## 45
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## 46
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## 47
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## 48
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## 49
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## 50 1 0 0 0
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                                                  2
## [1] "Geração:"
## [1] 19
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
                       4 18550
                                          2
## 1
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                       4 18550
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## 2
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                        5 18101
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## 3
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## 4
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## 5
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## 6
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## 8
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## 9
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          1 1 1 0 1 17980
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## 11 1 1 1 1 1 4 17980
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## 12
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## 14
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## 15
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## 16
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## 17
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## 18
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## 19
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## 21
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## 23
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## 24
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## 43
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## 50
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## [1] "Geração:"
## [1] 20
##
      V1 V2 V3 V4 V5 V6
                             V7 V8 V9 V10 V11 V12
## 1
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## 2
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## 5
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## 50
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```

Fitness em função das gerações

