### Tarea\_diplomado\_Paula

### Paula Celis Plá

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### Summary

```
summary(cars)
        speed
                         dist
##
##
           : 4.0
                              2.00
    Min.
                    Min.
                            :
    1st Qu.:12.0
                    1st Qu.: 26.00
    Median:15.0
                    Median: 36.00
##
##
    Mean
            :15.4
                    Mean
                            : 42.98
##
    3rd Qu.:19.0
                    3rd Qu.: 56.00
            :25.0
                            :120.00
    Max.
                    Max.
```

### Variables categoricas Seasons, time, hours y replicate asigna factor

```
Datos_Proyecto <- read_excel("Datos_Proyecto.xlsx")
summary(Datos_Proyecto)</pre>
```

```
##
      Seasons
                                                                  Replicate
                             time
                                                hours
##
    Length: 108
                        Length: 108
                                             Length: 108
                                                                 Length: 108
##
    Class :character
                        Class :character
                                             Class : character
                                                                  Class : character
    Mode :character
                        Mode :character
                                             Mode :character
                                                                 Mode
                                                                       :character
##
##
##
##
         Chla
                            Chlc
                                               Car
                                                                  PC
##
    Min.
            :0.6730
                      Min.
                              :0.01000
                                          Min.
                                                 :0.4190
                                                            Min.
                                                                    : 4.600
##
    1st Qu.:0.9888
                      1st Qu.:0.06775
                                          1st Qu.:0.6240
                                                            1st Qu.: 9.953
    Median :1.1660
                      Median :0.09500
                                          Median :0.7520
                                                            Median :13.815
##
                                                            Mean
##
    Mean
            :1.1856
                      Mean
                              :0.09365
                                          Mean
                                                 :0.7557
                                                                    :15.153
##
    3rd Qu.:1.3813
                      3rd Qu.:0.10975
                                          3rd Qu.:0.8780
                                                            3rd Qu.:18.990
            :1.9690
##
    Max.
                              :0.22100
                                          Max.
                                                 :1.2080
                                                                    :37.340
                      Max.
                                                            Max.
##
         DPPH
                                              N
                                                             Ratio
##
           : 3.792
                              :198.8
                                               :16.86
                                                                : 9.062
    Min.
                      Min.
                                       Min.
                                                         Min.
##
    1st Qu.: 6.539
                      1st Qu.:287.3
                                       1st Qu.:21.92
                                                         1st Qu.:10.644
                                                         Median :12.858
    Median : 7.769
                      Median :298.9
                                       Median :23.53
##
           : 7.444
                      Mean
                              :297.6
                                       Mean
                                               :24.44
                                                         Mean
                                                                :12.409
##
    3rd Qu.: 8.433
                      3rd Qu.:308.3
                                       3rd Qu.:26.80
                                                         3rd Qu.:13.720
    Max.
            :10.097
                      Max.
                              :350.9
                                       Max.
                                               :35.88
                                                                 :16.370
##
##
       Nitrato
                         Fosfato
                                         Temperature
                                                                рΗ
   Min.
           : 0.900
                      Min.
                              :0.5467
                                        Min.
                                                :11.54
                                                          Min.
                                                                  :7.620
    1st Qu.: 3.025
                      1st Qu.:0.9450
                                         1st Qu.:12.29
                                                          1st Qu.:7.850
    Median : 7.050
                      Median :1.2500
                                        Median :12.88
                                                          Median :7.960
```

```
Mean
           : 8.887
                      Mean
                              :1.3568
                                        Mean
                                                :13.98
                                                         Mean
                                                                 :7.982
##
    3rd Qu.:13.750
                      3rd Qu.:1.8400
                                        3rd Qu.:15.35
                                                         3rd Qu.:8.150
##
    Max.
           :30.600
                      Max.
                              :2.5000
                                        Max.
                                                :18.02
                                                         Max.
                                                                 :8.500
                                                                 UVB
##
       Salinity
                          PAR
                                               UVA
##
    Min.
           :16.44
                     Min.
                            :
                                 9.768
                                         Min.
                                                 : 1.100
                                                           Min.
                                                                   :0.100
##
    1st Qu.:29.62
                     1st Qu.: 196.000
                                         1st Qu.: 2.275
                                                            1st Qu.:0.350
    Median :34.10
                                         Median: 3.650
                     Median: 525.793
                                                           Median : 0.500
           :30.49
##
    Mean
                     Mean
                            : 569.983
                                         Mean
                                                 : 5.749
                                                           Mean
                                                                   :0.525
##
    3rd Qu.:34.63
                     3rd Qu.: 764.500
                                         3rd Qu.: 5.600
                                                            3rd Qu.:0.500
           :34.90
    Max.
                     Max.
                            :1921.000
                                         Max.
                                                 :24.600
                                                            Max.
                                                                   :1.500
```

### Transforma variables a factores

```
Datos_Proyecto$Seasons <- as.factor(Datos_Proyecto$Seasons)
Datos_Proyecto$time <- as.factor(Datos_Proyecto$time)
Datos_Proyecto$hours <- as.factor(Datos_Proyecto$hours)
Datos_Proyecto$Replicate <- as.factor(Datos_Proyecto$Replicate)
summary(Datos_Proyecto)</pre>
```

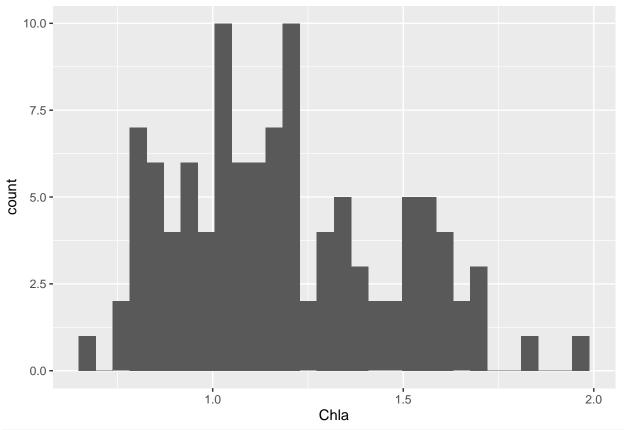
```
##
      Seasons
                                         Replicate
                                                          Chla
                    time
                                hours
##
    Autumn:27
                                         R1:36
                 day 1:36
                            hora 1:36
                                                    Min.
                                                            :0.6730
                 day 2:36
                                         R2:36
##
    Spring:27
                            hora 2:36
                                                    1st Qu.:0.9888
##
    Summer:27
                 day 3:36
                            hora 3:36
                                         R3:36
                                                    Median :1.1660
##
    Winter:27
                                                    Mean
                                                            :1.1856
##
                                                    3rd Qu.:1.3813
##
                                                            :1.9690
                                                    Max.
##
         Chlc
                            Car
                                                PC
                                                                 DPPH
##
    Min.
            :0.01000
                       Min.
                               :0.4190
                                         Min.
                                                 : 4.600
                                                            Min.
                                                                   : 3.792
##
    1st Qu.:0.06775
                       1st Qu.:0.6240
                                         1st Qu.: 9.953
                                                            1st Qu.: 6.539
##
    Median : 0.09500
                       Median : 0.7520
                                         Median :13.815
                                                            Median: 7.769
##
            :0.09365
                               :0.7557
                                                 :15.153
    Mean
                       Mean
                                         Mean
                                                            Mean
                                                                   : 7.444
##
    3rd Qu.:0.10975
                       3rd Qu.:0.8780
                                         3rd Qu.:18.990
                                                            3rd Qu.: 8.433
           :0.22100
##
                       Max.
                               :1.2080
                                         Max.
                                                 :37.340
                                                            Max.
                                                                   :10.097
    Max.
##
          С
                           N
                                          Ratio
                                                            Nitrato
##
           :198.8
                            :16.86
                                              : 9.062
                                                                : 0.900
    Min.
                     Min.
                                      Min.
                                                        Min.
    1st Qu.:287.3
                     1st Qu.:21.92
                                      1st Qu.:10.644
                                                        1st Qu.: 3.025
    Median :298.9
                     Median :23.53
                                      Median :12.858
                                                        Median : 7.050
##
    Mean
           :297.6
                            :24.44
                                              :12.409
                                                        Mean
##
                     Mean
                                      Mean
                                                                : 8.887
##
    3rd Qu.:308.3
                     3rd Qu.:26.80
                                      3rd Qu.:13.720
                                                        3rd Qu.:13.750
    Max.
           :350.9
                     Max.
                            :35.88
                                      Max.
                                              :16.370
                                                        Max.
                                                                :30.600
##
       Fosfato
                       Temperature
                                              Нq
                                                            Salinity
##
    Min.
            :0.5467
                      Min.
                              :11.54
                                               :7.620
                                                        Min.
                                                                :16.44
                                       Min.
##
    1st Qu.:0.9450
                      1st Qu.:12.29
                                       1st Qu.:7.850
                                                        1st Qu.:29.62
##
    Median :1.2500
                      Median :12.88
                                       Median :7.960
                                                        Median :34.10
##
    Mean
           :1.3568
                      Mean
                             :13.98
                                       Mean
                                               :7.982
                                                        Mean
                                                                :30.49
##
    3rd Qu.:1.8400
                      3rd Qu.:15.35
                                       3rd Qu.:8.150
                                                        3rd Qu.:34.63
           :2.5000
                              :18.02
                                               :8.500
##
    Max.
                      Max.
                                       Max.
                                                        Max.
                                                                :34.90
##
         PAR
                              UVA
                                                UVB
##
    Min.
                9.768
                        Min.
                                : 1.100
                                          Min.
                                                  :0.100
    1st Qu.: 196.000
                        1st Qu.: 2.275
##
                                           1st Qu.:0.350
##
    Median: 525.793
                        Median : 3.650
                                          Median : 0.500
##
           : 569.983
                                : 5.749
    Mean
                        Mean
                                          Mean
                                                  :0.525
                        3rd Qu.: 5.600
    3rd Qu.: 764.500
                                          3rd Qu.:0.500
           :1921.000
    Max.
                        Max.
                                :24.600
                                          Max.
                                                 :1.500
```

### **Including Plots**

### 3. Histogramas

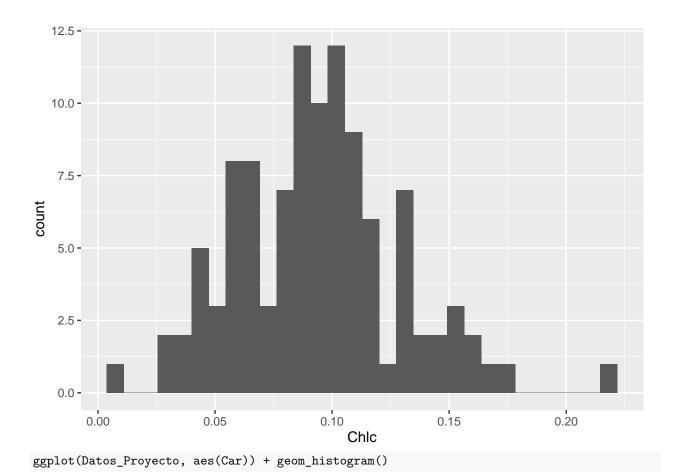
ggplot(Datos\_Proyecto, aes(Chla)) + geom\_histogram()

## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

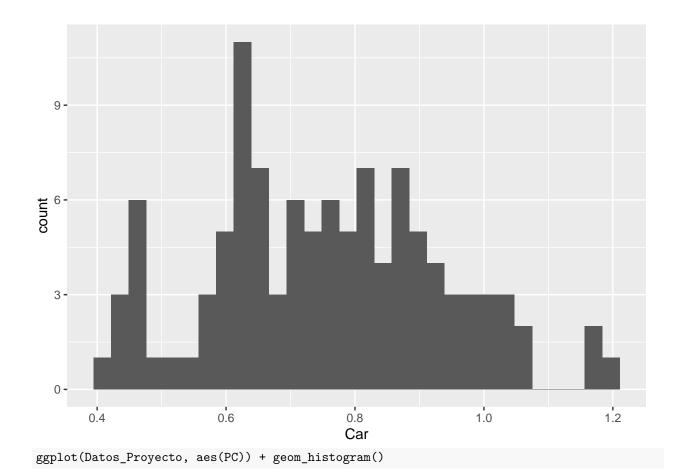


ggplot(Datos\_Proyecto, aes(Chlc)) + geom\_histogram()

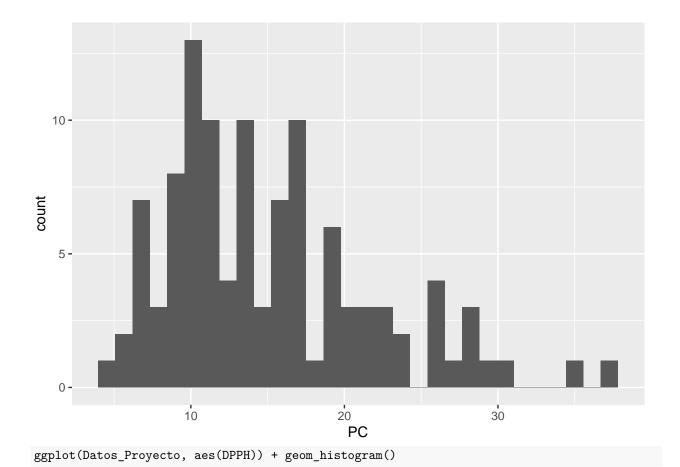
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



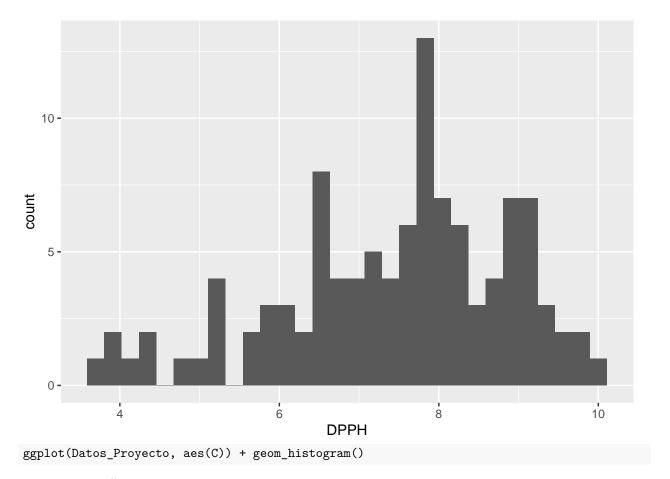
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



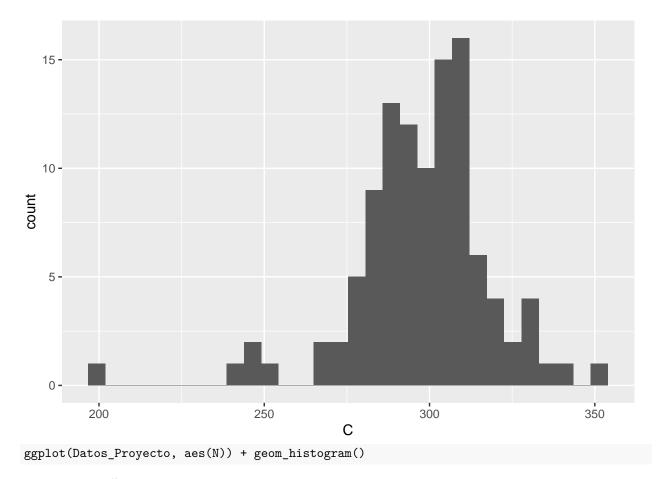
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



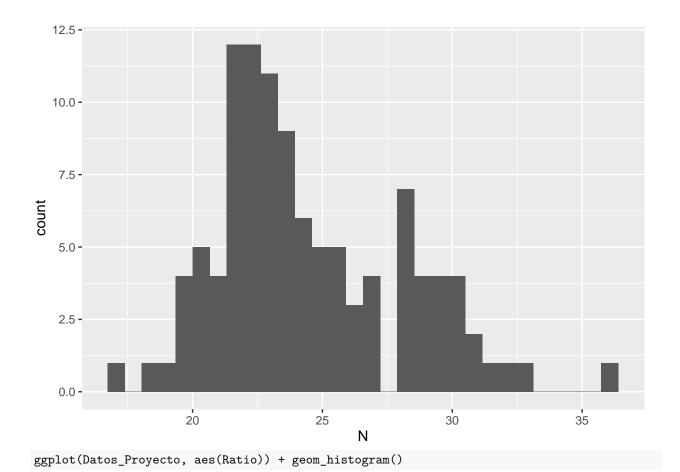
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



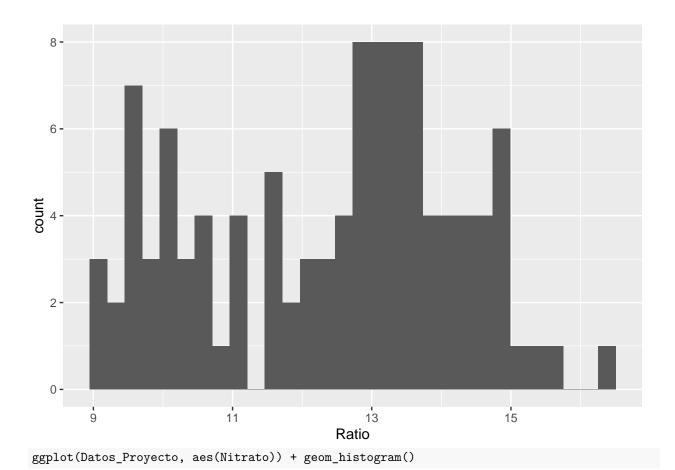
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



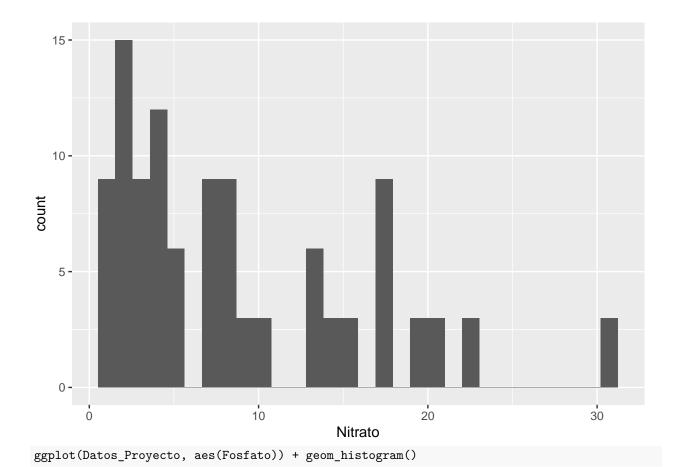
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



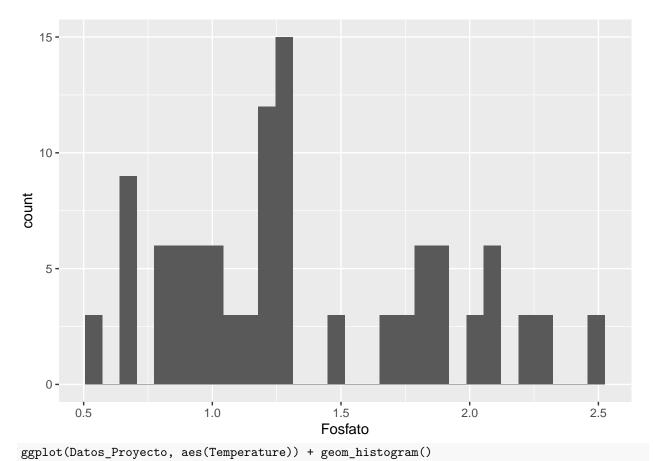
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



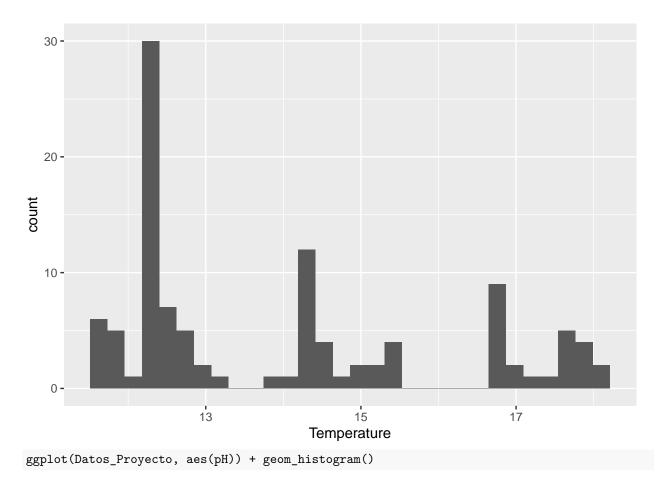
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



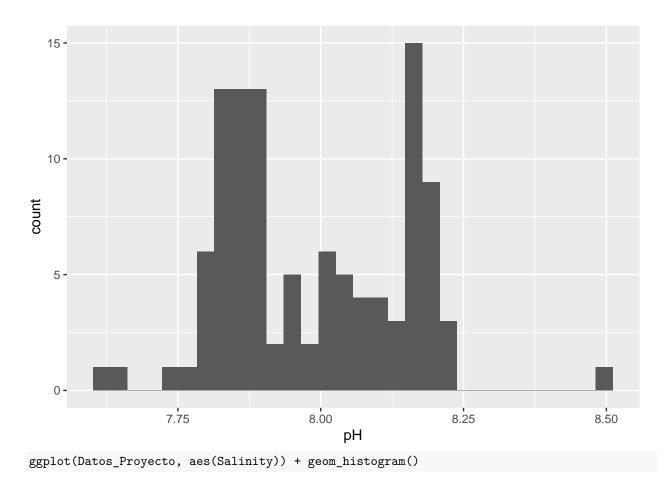
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



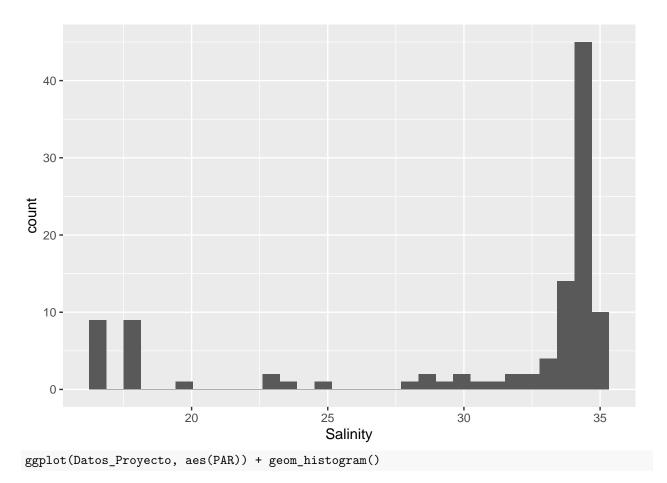
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



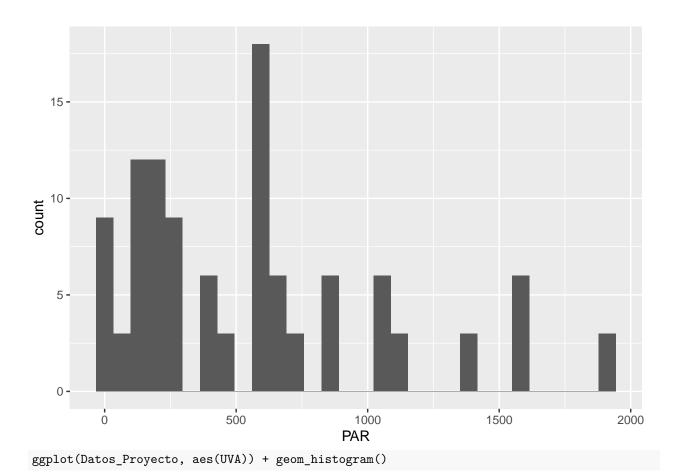
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



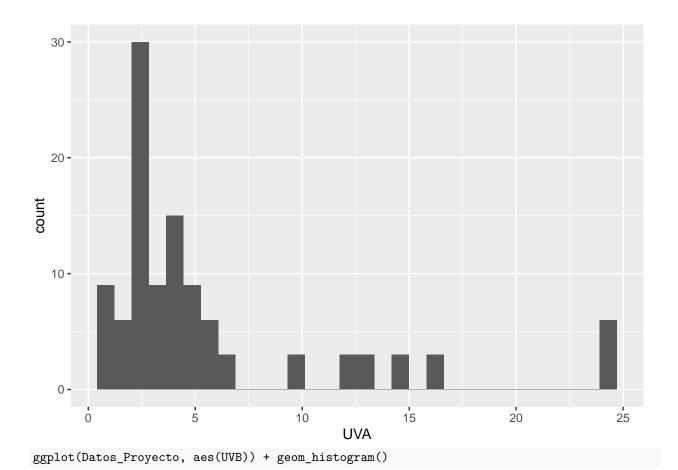
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



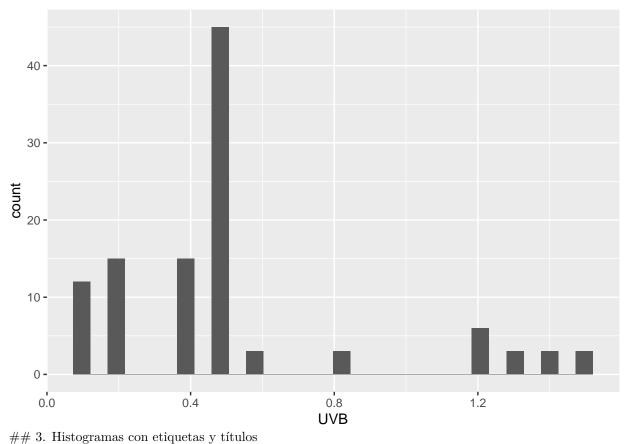
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



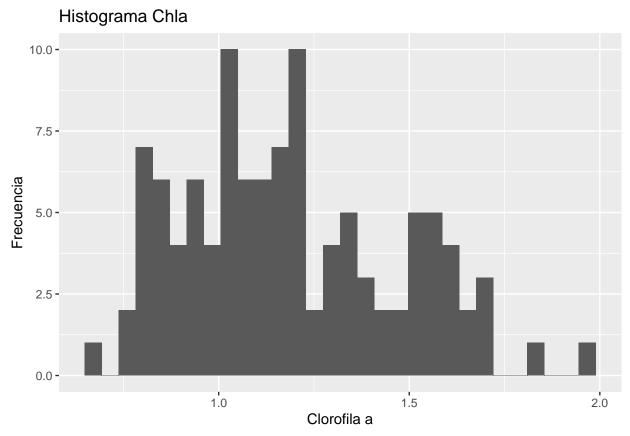
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



## 5. Histogramas con etiquetas y titulos

ggplot(Datos\_Proyecto, aes(Chla)) + geom\_histogram()+ labs(title="Histograma Chla", x="Clorofila a", y=

## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

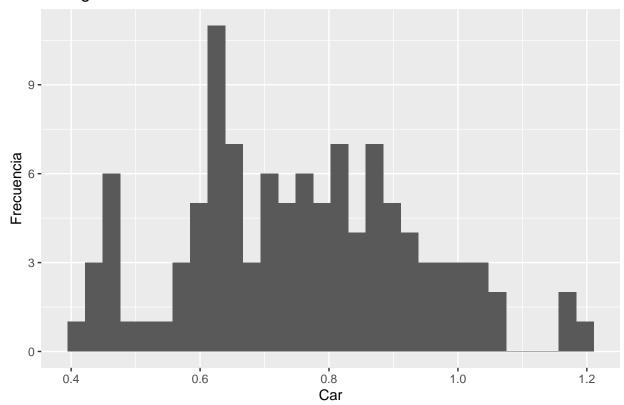


ggplot(Datos\_Proyecto, aes(Chlc)) + geom\_histogram()+ labs(title="Histograma Clorofila c", x="Chlc", y=
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# 

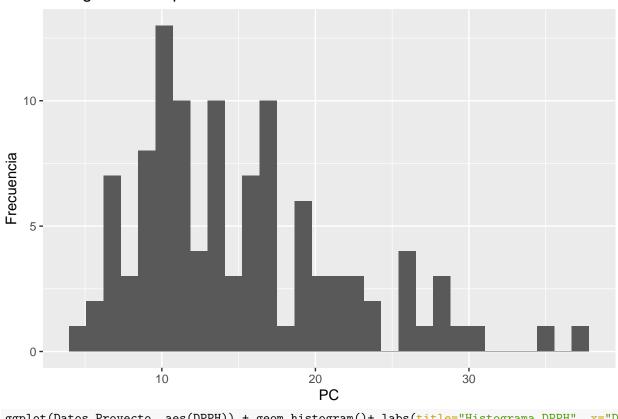
ggplot(Datos\_Proyecto, aes(Car)) + geom\_histogram()+ labs(title="Histograma Carotenos", x="Car", y="Fre
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Carotenos



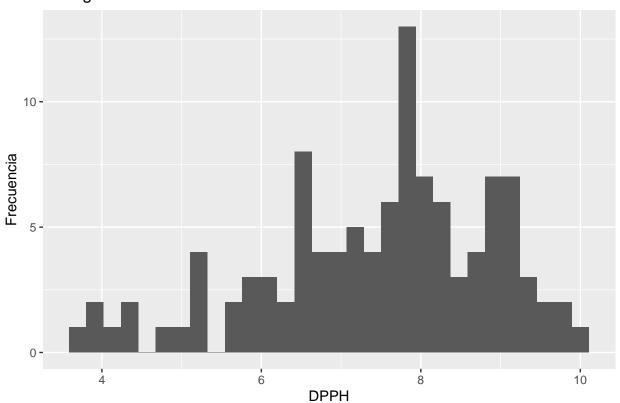
ggplot(Datos\_Proyecto, aes(PC)) + geom\_histogram()+ labs(title="Histograma Compuestos fenólicos", x="PC
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Compuestos fenólicos



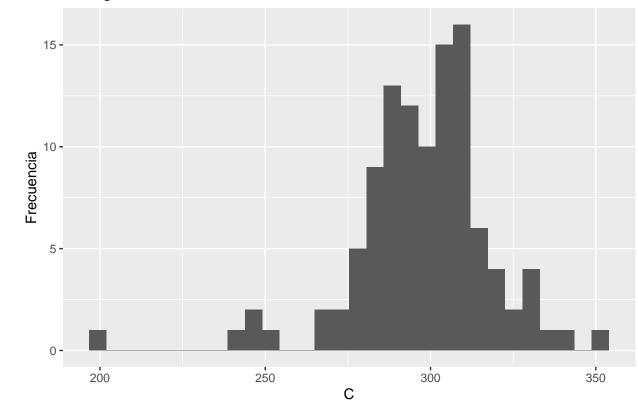
ggplot(Datos\_Proyecto, aes(DPPH)) + geom\_histogram()+ labs(title="Histograma DPPH", x="DPPH", y="Frecuent
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma DPPH



ggplot(Datos\_Proyecto, aes(C)) + geom\_histogram()+ labs(title="Histograma Carbono", x="C", y="Frecuenci")
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Carbono



ggplot(Datos\_Proyecto, aes(N)) + geom\_histogram()+ labs(title="Histograma Nitrogéno", x="N", y="Frecuen")
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# 

ggplot(Datos\_Proyecto, aes(Ratio)) + geom\_histogram()+ labs(title="Histograma Ratio C:N", x="Ratio", y=
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Ratio C:N 8 6 9 11 13 15

ggplot(Datos\_Proyecto, aes(Nitrato)) + geom\_histogram()+ labs(title="Histograma Nitrato", x="Nitrato",
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

Ratio

# Histograma Nitrato

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0 -

ggplot(Datos\_Proyecto, aes(Fosfato)) + geom\_histogram()+ labs(title="Histograma Fosfato", x="Fosfato",
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

Nitrato

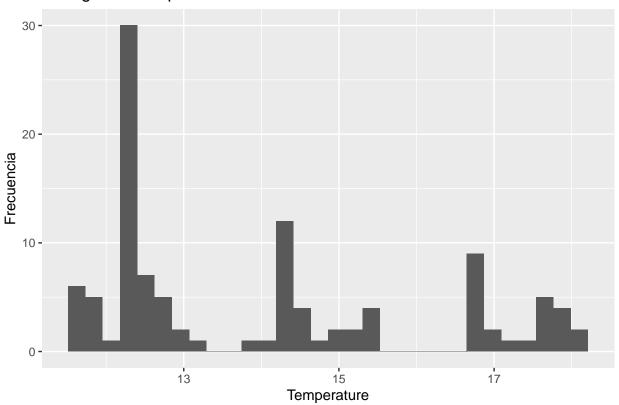
20

30

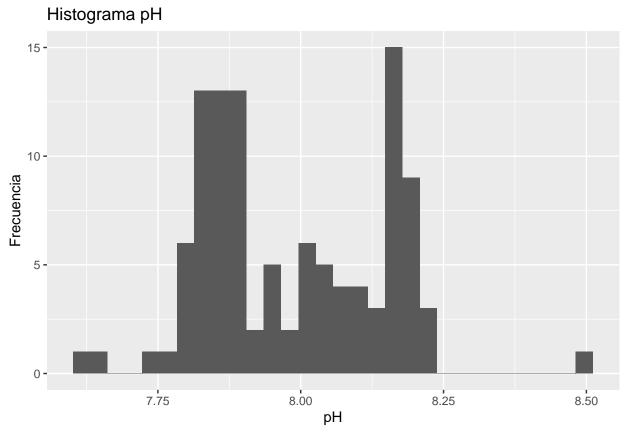
# Histograma Fosfato 15 10 0 0.5 1.0 1.5 Fosfato

ggplot(Datos\_Proyecto, aes(Temperature)) + geom\_histogram()+ labs(title="Histograma Tempertura", x="Temperature")
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Tempertura

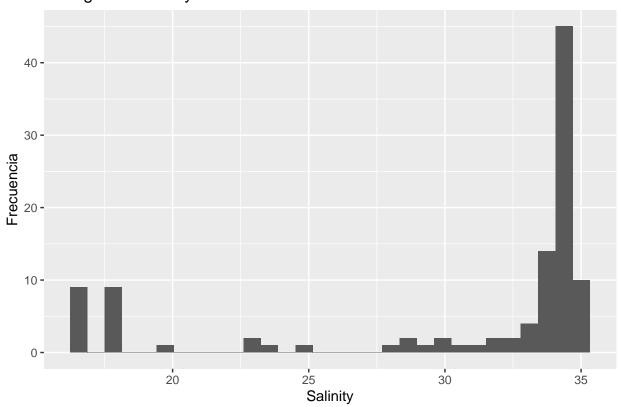


ggplot(Datos\_Proyecto, aes(pH)) + geom\_histogram()+ labs(title="Histograma pH", x="pH", y="Frecuencia")
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.



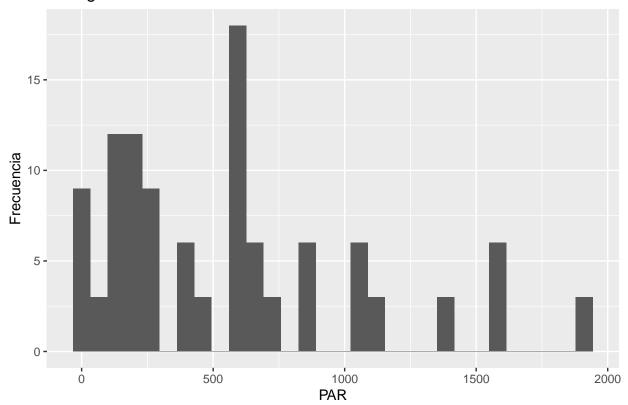
ggplot(Datos\_Proyecto, aes(Salinity)) + geom\_histogram()+ labs(title="Histograma Salinity", x="Salinity"
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Salinity



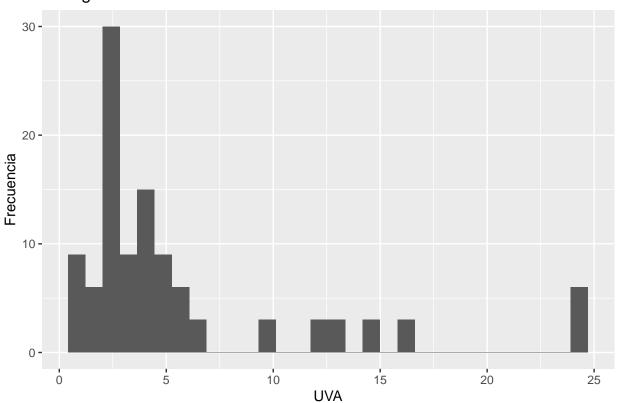
ggplot(Datos\_Proyecto, aes(PAR)) + geom\_histogram()+ labs(title="Histograma Radiación fotosintéticamnet
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Radiación fotosintéticamnete activa



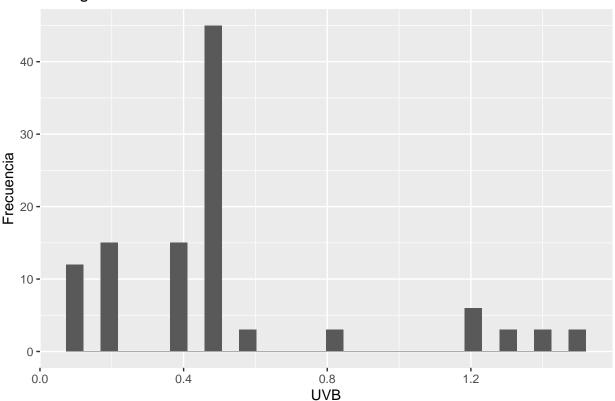
ggplot(Datos\_Proyecto, aes(UVA)) + geom\_histogram()+ labs(title="Histograma Radiación UVA", x="UVA", y=
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

# Histograma Radiación UVA



ggplot(Datos\_Proyecto, aes(UVB)) + geom\_histogram()+ labs(title="Histograma Radiación UVB", x="UVB", y=
## `stat\_bin()` using `bins = 30`. Pick better value with `binwidth`.

### Histograma Radiación UVB



## 4. Datos balanceados y tablas de frecuencia

Datos\_Proyecto\$Chla <- Datos\_Proyecto\$Chla
table(Datos\_Proyecto\$Chla)</pre>

```
##
## 0.673 0.745 0.769 0.786 0.808 0.815 0.816 0.825 0.826 0.832 0.835 0.855 0.864
       1
             1
                   1
                          1
                                2
                                      1
                                             1
                                                   1
                                                         1
                                                                1
                                                                      1
## 0.869 0.87 0.882 0.883 0.903 0.913 0.919 0.929 0.936 0.943 0.953 0.954 0.967
             1
                                1
                                      1
                                             1
                                                   1
                                                         1
                                                                1
       1
                    1
                          1
                                                                      1
                                                                            1
                                                                                  1
## 0.996
             1 1.005 1.006 1.009 1.013 1.021 1.034 1.036 1.038
                                                                  1.04 1.058 1.063
                                      1
                                             2
                                                                      2
                          1
                                1
## 1.065 1.074 1.084 1.108 1.118 1.127 1.136 1.137 1.139
                                                            1.14 1.166 1.173 1.176
                    1
                                      1
                                             1
                                                         1
                                                                1
       1
             1
                          1
                                1
                                                   1
## 1.182 1.184 1.188 1.19 1.191 1.192 1.199 1.202
                                                     1.21 1.222 1.245 1.256 1.278
##
                                                         3
                    1
                          1
                                1
                                      1
                                             1
                                                   1
                                                                1
                                                                      1
                                                                            1
## 1.289 1.298 1.31 1.319 1.322 1.329 1.345 1.38 1.385
                                                             1.4 1.414 1.432 1.479
                                             1
                                                                1
             1
                    1
                          2
                                1
                                      1
                                                   1
                                                         1
                                                                                  1
## 1.491 1.501 1.513 1.521 1.526 1.531 1.547 1.555 1.558 1.578 1.591 1.597 1.611
                    1
                          1
                                1
                                      1
                                                   1
                                                                1
                                                                      1
## 1.616 1.635 1.677 1.699 1.707 1.839 1.969
##
       1
                    1
                          1
                                1
                                      1
```

frec <- table(Datos\_Proyecto\$Chla)</pre>

Datos\_Proyecto\$Chlc <- Datos\_Proyecto\$Chlc
table(Datos\_Proyecto\$Chlc)</pre>

##

```
## 0.01 0.027 0.029 0.033 0.034 0.041 0.042 0.045 0.046 0.047 0.049 0.051 0.055
                                        1
##
                 1
                       1
                             1
                                  1
                                                1
                                                     1
                                                           1
                                                                 2
                                                                        1
      1
            1
## 0.057 0.058 0.06 0.061 0.062 0.064 0.065 0.067 0.068 0.069 0.074 0.075 0.076
                              2
                                    2
                  1
                        1
                                          1
                                                1
                                                      1
                                                            1
## 0.079 0.08 0.081 0.082 0.084 0.085 0.086 0.087 0.088 0.09 0.092 0.094 0.095
                                                            2
            2
                  2
                        2
                              3
                                    1
                                          2
                                                1
                                                      3
                                                                        1
      1
                                                                  1
## 0.096 0.097 0.098
                     0.1 0.101 0.102 0.103 0.105 0.106 0.107 0.108 0.109 0.112
                  1
                        1
                              4
                                    5
                                          1
                                                1
                                                      1
                                                            4
                                                                  2
                                                                        1
## 0.113 0.115 0.117 0.118 0.119 0.127 0.129 0.13 0.131 0.132 0.134 0.135 0.141
            1
                 1
                        1
                              2
                                    1
                                          2
                                                1
                                                      1
                                                            2
                                                                  1
## 0.143 0.148 0.152 0.154 0.155 0.157 0.158 0.166 0.178 0.221
            1
                  1
                        1
                              1
                                    1
                                          1
                                                1
                                                      1
frec <- table(Datos_Proyecto$Chlc)</pre>
```

Datos\_Proyecto\$Car <- Datos\_Proyecto\$Car</pre> table(Datos\_Proyecto\$Car)

```
## 0.419 0.435 0.438 0.443 0.452 0.453 0.459 0.46 0.461 0.469 0.503 0.511 0.547
              1
                  1
                       1
                            1
                                1
                                     1
                                          1
                                              1
                                                  1
         1
## 0.558 0.568 0.584 0.586 0.589 0.59 0.605 0.609 0.614 0.617 0.62 0.621 0.623
              1
                  1
                       1
                            1
                                 1
                                     1
                                          1
                                               1
                                                             1
         1
                                                   1
                                                        1
## 0.624 0.626 0.631 0.632 0.635 0.641 0.643 0.645 0.649 0.659 0.66 0.665 0.669
                                 1
                                                   1
         1
              1
                   1
                       1
                            1
                                     1
                                          1
                                               1
## 0.671 0.673 0.694 0.695 0.703 0.707 0.715 0.722 0.724 0.733 0.743 0.746 0.752
          1
              1
                   2
                       1
                            1
                                 1
                                     1
                                          1
                                               1
                                                    1
                                                        1
1
                   1
                       1
                            1
                                 1
                                     2
                                          1
                                               2
                                                    1
## 0.832 0.835 0.848 0.854 0.86 0.865 0.866 0.874 0.876 0.884 0.897 0.903 0.905
                            2
                       1
                                 1
                                     1
                                          1
                                               1
                                                   1
                                                        1
                                                             1
         1
             1
                  1
1
                   1
                        2
                            1
                                 1
                                     1
                                          1
                                               1
                                                    1
                                                        2
         1
## 1.026 1.031 1.044 1.056 1.067 1.161 1.172 1.208
         1
              1
                   1
     1
                        1
                            1
                                 1
```

frec <- table(Datos\_Proyecto\$Car)</pre>

Datos\_Proyecto\$PC <- Datos\_Proyecto\$PC</pre> table(Datos\_Proyecto\$PC)

```
##
    4.6 5.19 6.04 6.34 6.35 6.62 6.86 7.05 7.27 7.32 7.35 7.55 8.37
##
##
      1
                 1
                       1
                             1
                                   1
                                         1
                                               1
                                                     1
                                                          1
                                                                1
                                                                      1
##
   8.65
            9 9.12
                      9.3 9.32 9.48 9.53 9.54 9.63 9.68
                                                               9.7 9.75 9.82
##
                  1
                        1
                              1
                                    1
                                         1
                                               1
                                                     1
                                                           1
                                                                 1
    9.9 9.97 10.04 10.38 10.41 10.5 10.54 10.74 11.17 11.2 11.27 11.3 11.36
##
##
      1
            1
                  1
                        1
                              1
                                   1
                                         2
                                               1
                                                     1
                                                           1
                                                                 1
                                                                       1
## 11.37 11.5 11.78 11.84 12.1 12.52 12.57 12.88 13.14 13.34 13.38 13.42 13.62
            1
                  1
                        1
                             1
                                   1
                                         1
                                               1
                                                     1
                                                           1
                                                                 1
                                                                      1
## 13.76 13.87 13.93
                       14 14.02 14.16 14.44 14.7 15.32 15.51 15.73 15.83 15.97
                        1
                                         1
                  1
                             1
                                   1
                                               1
                                                     1
                                                           1
                                                                 1
                                                                      1
                                                                            1
      1
            1
## 15.98 16.33 16.6 16.61 16.66 16.76 16.94 16.95 16.97 17.17 17.24 17.35 17.88
                                   1
            1
                  1
                       1
                             1
                                         1
                                               1
                                                    1
                                                          1
                                                                1
                                                                      1
## 18.67 18.89 19.29 19.51 19.53 19.73 19.81 19.89 20.06 21.64 21.74 22.64 22.67
```

Datos\_Proyecto\$DPPH <- Datos\_Proyecto\$DPPH
table(Datos\_Proyecto\$DPPH)</pre>

##

3.7921091487048 3.83386983732118 3.94822628290414 4.07315491016667 ## 4.34394543819923 4.37511757369667 4.73026296031757 4.96381302541734 ## 5.1194784378545 5.19038236694484 5.26279857279554 5.28572544493435 ## 5.55196731924744 5.70177684116028 5.8070681644718 5.90131463394357 5.96584130019852 6.08471171781293 6.11925664673893 6.15344293599768 6.23673572752751 6.37671184950451 6.4671773936417 6.47062777818111 6.47064767825994 6.52856916357015 6.53801630112277 6.53887774696075 ## 6.55357474292809 6.59544000293789 6.75880275621157 6.76557744492377 ## 6.81376807198535 6.81892550440379 6.88880073443357 6.90031501583034 ## 6.95194609308745 7.01531486776157 7.08640909495452 7.11441001985266 7.13044683746743 7.17826668387887 7.20111198374913 7.28495721947921 7.32596996180665 7.3880453432457 7.41821472683629 7.53759848818543 ## 7.57761861614438 7.58093204253681 7.58333744979186 7.64708630985723 ## 7.67488209576931 7.74598658508453 7.79158426429331 7.79578363292874 ## 7.81205032442958 7.81229693476463 7.83815304355675 7.8444370360342 ## 7.84532151099326 7.87903013092856 7.88242034424958 7.90826123438925 ## 7.92346109756698 7.92651169747938 7.96286949555254 8.0453346445548 ## 8.06649986730547 8.0803288577418 8.09590000250503 8.09663070958325 8.14327334588672 8.15693463388017 8.20102375293735 8.25925298394825 ## 8.34002719005116 8.34545377528216 8.36721344084489 8.37264084101011 ## 8.39960941129238 8.53343299621107 8.65734800174523 8.67401723119002 ## 8.69668123896576 8.80465504054987 8.88215196259132 8.89903180720949

```
##
                                      1
## 8.90623955108464 8.92560217841661 8.96707301649087 8.98127144216437
## 8.98449281324139 9.06668762571664 9.07612448459151 9.0792302344551
                   1
                                                         1
## 9.08446116671832 9.10600868735363 9.13048519777377 9.13386697153185
                   1
                                      1
                                                         1
## 9.28282925475416 9.30481657147222 9.3322087818022 9.4630849489861
##
                   1
                                      1
                                                         1
## 9.61630593483038 9.81265544853422 9.86463936386016 10.0969856269446
                   1
                                      1
frec <- table(Datos_Proyecto$DPPH)</pre>
Datos_Proyecto$C <- Datos_Proyecto$C</pre>
table(Datos_Proyecto$C)
##
##
    198.84
            240.55 245.14
                              246.18
                                        249.3
                                                 268.7
                                                         269.23
                                                                  271.92
                                                                          274.08
##
         1
                  1
                           1
                                    1
                                             1
                                                     1
                                                              1
                                                                       1
                                                                                1
                      278.54
                              279.67
                                       280.73
##
     278.3
            278.42
                                                282.57
                                                          283.1
                                                                  283.36
                                                                           284.11
                                                                                   284.31
##
         1
                  1
                           1
                                    1
                                             1
                                                     1
                                                              1
                                                                       1
##
    284.99
             285.08
                      285.22
                              286.02
                                       286.06
                                                286.99
                                                          287.3
                                                                  287.35
                                                                           288.01
                                                                                   289.58
##
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                       1
                                                                                1
                              290.47
##
    290.17
             290.36
                       290.4
                                       290.54
                                                290.71
                                                         291.24
                                                                  291.43
                                                                          291.88
##
         1
                  1
                           1
                                    1
                                             1
                                                     1
                                                              1
                                                                       1
##
    292.53
            293.59
                       294.6
                              294.75
                                        294.8
                                                295.23
                                                         295.78
                                                                  296.26
                                                                          296.73
                                                                                    296.9
##
                           1
                                                      1
                                                              1
                      298.66
                              299.22
                                       299.57
                                                299.65
                                                         299.73
##
    297.91
            298.46
                                                                  301.85
                                                                          302.11
                                                                                   302.15
##
                           2
                                                              1
         1
                                    1
                                             1
                                                      1
                                                                       1
                                                304.55
                                                         304.84
                              304.02
##
    303.55
              303.6 303.625
                                       304.51
                                                                  304.85
                                                                          305.07
                                                                                   305.39
##
                                             1
                                                              1
                           1
                                    1
                                                      1
                                                                       1
     306.1
            306.71
                     306.89
                              306.97
                                       307.01
                                                 307.1
                                                         307.53
                                                                  307.87
                                                                          308.18
                                                                                   308.28
##
##
                           1
         1
                                    1
                                             1
                                                     1
                                                              1
                                                                       1
                      310.12
                                                310.58
                                                         311.85
##
    308.43
            308.71
                              310.18
                                        310.5
                                                                  311.98
                                                                          312.63
                                                                                   312.88
##
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                       1
                                                                                1
                      315.07
                              315.54
                                       318.24
                                                 318.9
                                                         319.96
                                                                  320.72
                                                                          326.45
                                                                                   327.72
##
            314.72
    314.51
                                                                       1
##
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                                1
##
    328.36
            330.28
                       331.8
                              332.06
                                       333.72
                                                341.69
                                                         350.93
         1
frec <- table(Datos_Proyecto$C)</pre>
Datos_Proyecto$N <- Datos_Proyecto$N</pre>
table(Datos_Proyecto$N)
##
##
     16.86
            18.308
                    18.775
                             19.407
                                        19.43
                                                 19.71
                                                         19.915
                                                                  20.071
                                                                          20.188
                                                                                   20.297
##
                           1
                                                     1
         1
                  1
                                    1
                                             1
                                                              1
                                                                       1
    20.572
            20.631
                      20.832
                              21.104
                                                                          21.387
##
                                       21.157
                                                  21.2
                                                          21.35
                                                                  21.373
##
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                       1
                                                                                1
                                                                                         1
##
    21.483
            21.567
                      21.688
                               21.75
                                        21.78
                                                 21.84
                                                         21.854
                                                                  21.944 21.9935
                                                                                    22.04
##
                                                                       1
                                                                                         1
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                                1
                              22.318
                                       22.407
                                                22.435
##
    22.049
             22.159
                      22.292
                                                          22.45
                                                                  22.465
                                                                            22.54
                                                                                   22.555
##
         1
                  1
                           1
                                    1
                                             1
                                                      1
                                                              1
                                                                       1
                                                                                1
```

```
22.69 22.78 22.807
                           22.83 22.879 22.918
                                                  23.07
                                                         23.17
                                                                 23.19 23.226
##
##
        1
               1
                              1
                                      1
                                             1
                                                          1
                                                                    1
                                                                            1
                      1
                                                     1
   23.248 23.292
                   23.49
                           23.53
                                 23.532 23.604 23.618
                                                         23.62
                                                                 23.67 23.705
##
##
                                                            1
        1
               1
                       1
                              1
                                      1
                                              1
                                                     1
                                                                    1
##
   23.964
          24.058
                   24.36
                          24.418
                                 24.513
                                           24.6
                                                 24.63
                                                         24.68
                                                                 25.14
                                                                        25.19
##
        1
               1
                       2
                              1
                                      1
                                                     1
                                                            1
                                                                    1
                                             1
                                                                            1
##
    25.36 25.437
                   25.53
                           25.57
                                 25.619
                                          26.08
                                                  26.12
                                                         26.47
                                                                 26.71
                                                                        26.74
##
        1
               1
                       1
                              1
                                      1
                                           1
                                                     1
                                                            1
                                                                    1
                                                                            1
                                                         28.51
##
       27
            27.93
                   28.13
                           28.21
                                   28.37
                                          28.38
                                                  28.39
                                                                28.614
                                                                        28.64
##
       2
               1
                       1
                             1
                                      1
                                           1
                                                     1
                                                            1
                                                                    1
                                                                           1
##
    28.77
            29.11
                   29.31
                           29.49
                                   29.7
                                          29.82
                                                  29.92
                                                         30.06
                                                                 30.16
                                                                        30.33
##
                                      1
                                             1
                                                     1
                                                            1
                                                                    1
                                                                           1
        1
               1
                       1
                              1
##
    30.89
            31.11
                   31.37
                           32.26
                                  32.53
                                          35.88
##
                              1
                                     1
        1
               1
                       1
                                              1
```

frec <- table(Datos\_Proyecto\$N)</pre>

Datos\_Proyecto\$Ratio <- Datos\_Proyecto\$Ratio
table(Datos\_Proyecto\$Ratio)</pre>

##							
##	9.062093	9.11794132	9.14746006	9.26	9.28	9.49	9.52
##	1	1	1	1	1	1	1
##	9.57	9.63	9.65718555	9.66	9.68	9.71	9.83
##	1	1	1	1	1	1	1
##			10.05		10.11	10.14	10.1776669
##			1		1	_	_
##	10.23	10.37	10.42	10.54	10.5637783	10.6	10.6585675
##			1			_	=
##	10.7622635	10.969617	10.9952806				
##	1	_		1		1	
##	11.5500349		11.7071826	11.8260834	11.94	12.1092008	12.11
##	1	1	1	1	1	1	1
##	12.17	12.33	12.36	12.41	12.51	12.56	12.61
##	1	1	1	1	1	1	1
##	12.65	12.74	12.7517817	12.81	12.8375075	12.8791122	12.88
##	1	1	1	1	1	1	1
##	12.94	12.95	13.03	13.04	13.06	13.1550619	13.16
##	1	1	1	1	1	1	1
##	13.2	13.21	13.22	13.24	13.27	13.29	13.44
##	1	_	_	_	1	3	2
##	13.4573038	13.51	13.57	13.59	13.64	13.6957267	13.7
##	1	1	1	1	1	1	1
##	13.72	13.81	13.9017477	13.93	13.97	14.02	14.04
##	2	1	1	1	1	1	1
##	14.19	14.2	14.27	14.3	14.43	14.48	14.52
##	1	1	1	1	1	1	1
##	14.58	14.74	14.81	14.84	14.85	14.88	14.9
##	1	2	1	1	1	1	1
##	14.95	15.02	15.34	15.51	16.37		
##	1	1	1	1	1		

frec <- table(Datos\_Proyecto\$Ratio)</pre>

Datos\_Proyecto\$Nitrato <- Datos\_Proyecto\$Nitrato</pre>

#### table(Datos\_Proyecto\$Nitrato) ## 0.9 ## 1 1.4 1.93333333333333 ## 3 3 3 3 2 ## 2.2 2.5 2.8 ## 3 3 6 3 3.6 4.2 ## 3.1 3.4 ## 3 3 3 6 7 4.6 5.1 5.4 ## ## 3 3 3 3 ## 7.1 7.4 8 8.3 ## 3 3 3 3 9.4 10.4 ## 8.6 13.4 ## 3 3 3 3 ## 13.7 13.9 15 17.6 ## 3 3 3 3 ## 17.7 17.9 19.9 20.6 ## 3 3 3 3 ## 22.6 30.6 ## 3 3 frec <- table(Datos\_Proyecto\$Nitrato)</pre> Datos\_Proyecto\$Fosfato <- Datos\_Proyecto\$Fosfato</pre> table(Datos\_Proyecto\$Fosfato) ## 0.65 0.65666666666667 ## 0.54666666666666 0.66 ## 3 3 3 0.82 0.85 ## 0.89 0.93 ## 6 3 3 3 0.95 1.01 1.02 1.06 ## 3 ## 3 3 3 ## 1.13 1.18 1.21 1.24 ## 3 3 3 6 1.26 1.31 1.51 ## 1.27 ## 3 6 6 3 1.7 1.84 1.87 ## 1.73 ## 3 3 6 3 1.88 2.06 ## 2.03 2.11 ## 3 3 3 3 2.3 ## 2.22 2.5 ## 3 3 frec <- table(Datos\_Proyecto\$Fosfato)</pre> Datos\_Proyecto\$Temperature <- Datos\_Proyecto\$Temperature</pre> table(Datos\_Proyecto\$Temperature)

## ## 11.54 11.55 11.57 11.67 11.68 11.71 11.81 11.87 11.88 11.92 11.96 12.23 12.27 1 1 1 1 1 1 1 2 1 ## 12.29 12.43 12.45 12.46 12.47 12.58 12.6 12.61 12.66 12.72 12.73 12.76 13.01 ## 28 1 1 1 1 1 1 1 1 1 2

```
## 13.05 13.12 13.8 14.03 14.22 14.23 14.27 14.28 14.31 14.32 14.33 14.38 14.43
                 1
                       1
                             1
                                   2
                                         1
                                               2
                                                    1
                                                           1
                                                                3
                                                                      1
                                                                            1
      1
           1
## 14.49 14.54 14.57 14.82 14.94 15.18 15.25 15.34 15.37 15.45 15.49 16.73 16.74
                             2
                  1
                        1
                                   1
                                         1
                                               1
                                                     1
                                                           1
## 16.76 16.77 16.79 16.81 16.83 16.95 17.01 17.21 17.49 17.7 17.71 17.72 17.73
                        2
                             1
                                   1
                                         1
                                               1
                                                     1
                                                           1
            1
                  1
## 17.76 17.8 17.84 17.99 18.02
##
            2
                  2
      1
                        1
```

frec <- table(Datos\_Proyecto\$Temperature)</pre>

Datos\_Proyecto\$pH <- Datos\_Proyecto\$pH
table(Datos\_Proyecto\$pH)</pre>

## 9 10 ## 7.96 7.97 8 8.01 8.02 8.03 8.04 8.05 8.06 8.07 8.08 8.09 8.1 8.12 8.15 8.16 ## 8.17 8.18 8.23 8.5 

frec <- table(Datos\_Proyecto\$pH)</pre>

Datos\_Proyecto\$Salinity <- Datos\_Proyecto\$Salinity
table(Datos\_Proyecto\$Salinity)</pre>

##	34.5588531494141	34.57	34.58	34.6
##	1	1	2	1
##	34.52	34.526481628418	34.54	34.542366027832
##	1	1	2	1
##	34.42	34.45	34.4802780151367	34.5
##	1	1	1	1
	34.3085403442383	34.33	_	34.4082298278809
##	2	1	1	1
##	34.1	34.106876373291	34.27	34.29
##	1	33.03	10	1
##	33.59	33.63	33.74	33.84
##	33.09	1	1	1
##	33.09	33.11	33.31	33.56
##	31.95	32.22	32.57	32.92
##	31.95	32.22	32.57	32.92
##	29.87	30.61	31.02	31.89
##	1	1	1	1
##	28.76	28.9	29.23	29.75
##	1	1	1	1
##	22.73	23.33	24.55	27.88
##	9	9	1	1
##	16.44	17.87	20.05	22.72
##				

```
##
                 1
                                  1
##
              34.66 34.6629180908203 34.6690940856934
                                                                34.67
##
## 34.6720542907715 34.6816215515137 34.6838569641113 34.6904830932617
##
                 1
## 34.6910133361816 34.7156066894531 34.7162590026855 34.7225875854492
                                  1
                                                  1
## 34.7283363342285
                             34.73
                                               34.74 34.7411422729492
##
                 1
                                  1
                                                   1
                              34.75
## 34.7426490783691
                                                 34.9
                 1
                                  1
                                                    1
```

frec <- table(Datos\_Proyecto\$Salinity)</pre>

Datos\_Proyecto\$PAR <- Datos\_Proyecto\$PAR</pre> table(Datos\_Proyecto\$PAR)

##				
##	9.76801	10.3785	12.4389	75.3968
##	3	3	3	3
##	118.59	121	126	134
##	3	3	3	3
##	190	198	201	210.444483333333
##	3	3	3	3
##	242.216	287	292	368
##	3	3	3	3
##	408.043	462.759	588.828	593.987
##	3	3	3	3
##	603.632	605	620	624
##	3	3	3	3
##	648	658	743.666	827
##	3	3	3	3
##	842.72	1054.56	1067	1118
##	3	3	3	3
##	1411	1562.96	1562.99666666667	1921
##	3	3	3	3

frec <- table(Datos\_Proyecto\$PAR)</pre>

Datos\_Proyecto\$UVA <- Datos\_Proyecto\$UVA</pre> table(Datos\_Proyecto\$UVA)

##				
##	1.1	1.2	1.7	1.9
##	3	6	3	3
##	2.1	2.2	2.3	2.4
##	9	3	3	6
##	2.7	2.8	2.9	3.6
##	6	3	3	6
##	3.7	3.9	4	4.1666666666667
##	3	6	3	3
##	4.5	4.7	4.8	5.6
##	3	3	3	6
##	6.4	10	12.4	13.2
##	3	3	3	3

```
## 14.5 15.9 24.1 24.6
## 3 3 3 3

frec <- table(Datos_Proyecto$UVA)

Datos_Proyecto$UVB <- Datos_Proyecto$UVB
table(Datos_Proyecto$UVB)

##
## 0.1 0.2 0.4 0.5 0.6 0.8 1.2 1.3 1.4 1.5
## 12 15 15 45 3 3 6 3 3 3

frec <- table(Datos_Proyecto$UVB)</pre>
```

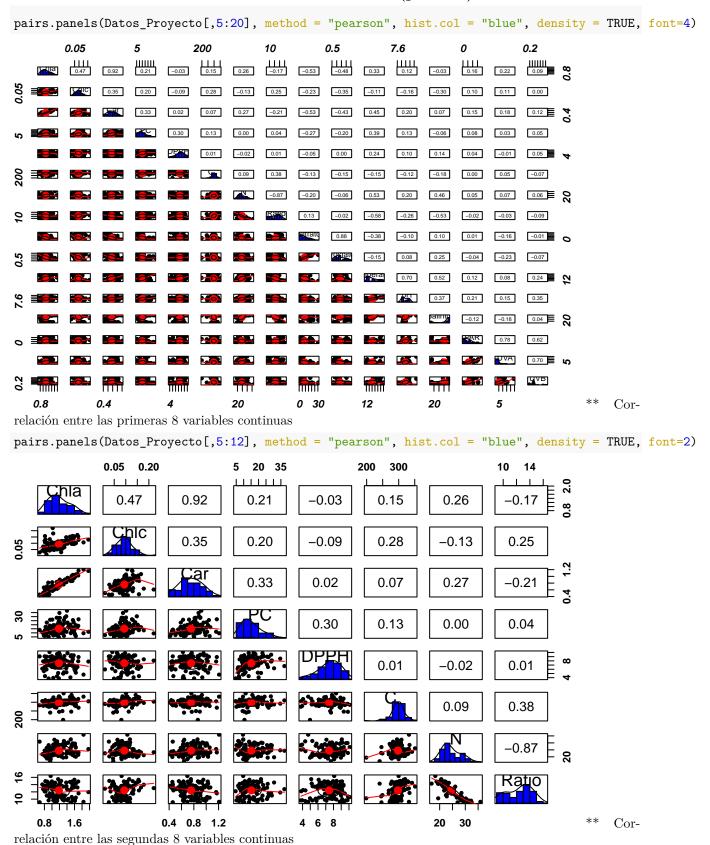
# 5. Relación entre variables cuantitativas y factores

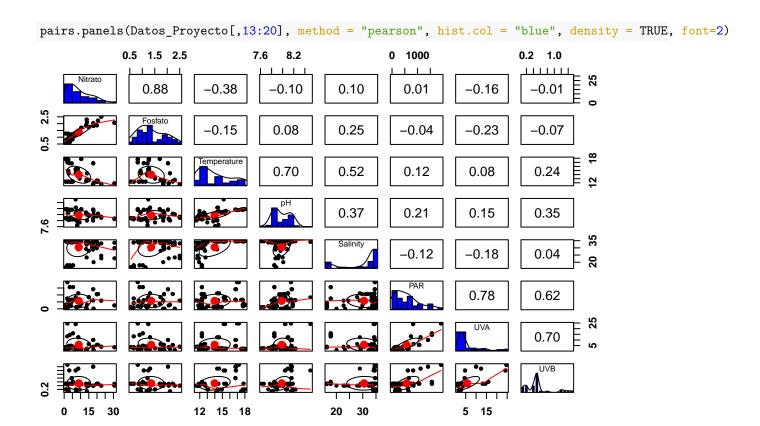
\*\* No se incluiran las variables Seasons, time, hours y Replicate, porque son variables categóricas.

summary(Datos\_Proyecto)

##	Seasons	time	hours	Replicate	Chla
##	Autumn:27 day	7 1:36 hc	ra 1:36	R1:36 Min	ı. :0.6730
##	Spring:27 day	2:36 hc	ra 2:36	R2:36 1st	t Qu.:0.9888
##	Summer:27 day	3:36 hc	ora 3:36	R3:36 Med	dian :1.1660
##	Winter:27			Mea	an :1.1856
##				3rd	d Qu.:1.3813
##				Max	k. :1.9690
##	Chlc	Ca	ar	PC	DPPH
##	Min. :0.01000	Min.	:0.4190	Min. : 4.60	00 Min. : 3.792
##	1st Qu.:0.06775	1st Qu.	:0.6240	1st Qu.: 9.9	53 1st Qu.: 6.539
##	Median :0.09500	) Median	:0.7520	Median:13.8	15 Median : 7.769
##	Mean :0.09365	Mean	:0.7557	Mean :15.1	53 Mean : 7.444
##	3rd Qu.:0.10975	3rd Qu.	:0.8780	3rd Qu.:18.99	
##	Max. :0.22100	Max.	:1.2080	Max. :37.3	40 Max. :10.097
##	С	N		Ratio	Nitrato
##	Min. :198.8			n. : 9.062	
##	1st Qu.:287.3			t Qu.:10.644	•
##	Median :298.9	Median :2		dian :12.858	Median : 7.050
##	Mean :297.6	Mean :2		an :12.409	Mean : 8.887
##	3rd Qu.:308.3	3rd Qu.:2		d Qu.:13.720	3rd Qu.:13.750
##	Max. :350.9			x. :16.370	Max. :30.600
##	Fosfato	Tempera		рН	Salinity
##	Min. :0.5467			in. :7.620	Min. :16.44
##	1st Qu.:0.9450	-		st Qu.:7.850	1st Qu.:29.62
##	Median :1.2500	Median :		edian :7.960	Median:34.10
##	Mean :1.3568			ean :7.982	Mean :30.49
##	3rd Qu.:1.8400	-		rd Qu.:8.150	3rd Qu.:34.63
##	Max. :2.5000	Max. :		ax. :8.500	Max. :34.90
##	PAR	_	JVA	UVB	20
##	Min. : 9.76		: 1.100		
##	1st Qu.: 196.00		1.: 2.275	· ·	
##	Median: 525.79		1 : 3.650 : 5.749		
## ##	Mean : 569.98				
##	3rd Qu.: 764.50	-	1.: 5.600	· ·	
##	Max. :1921.00	o Max.	:24.600	Max. :1.50	00

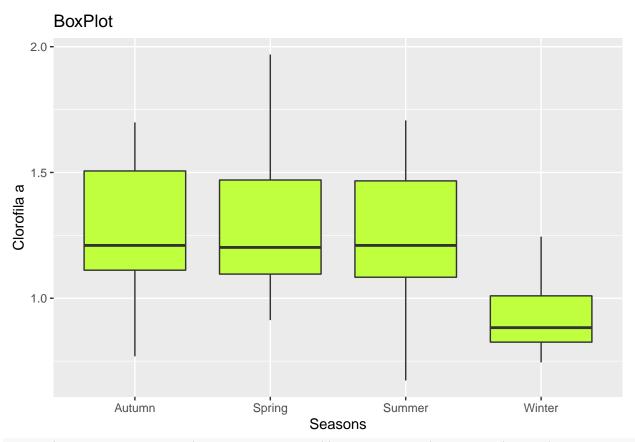
## 5. Graficas de correlación de variables continuas (pearson)



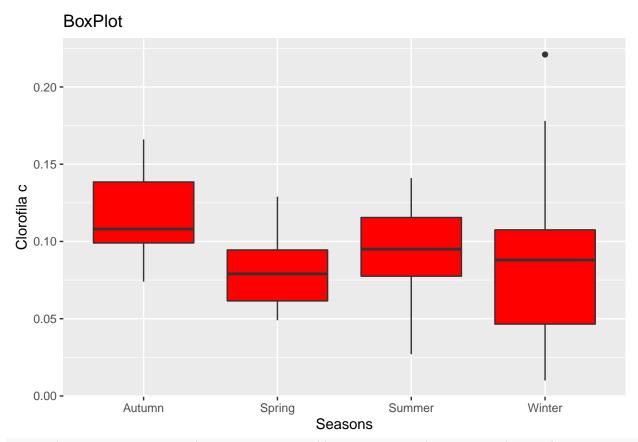


## 5. Relación entre variables continuas y factores (boxplot)

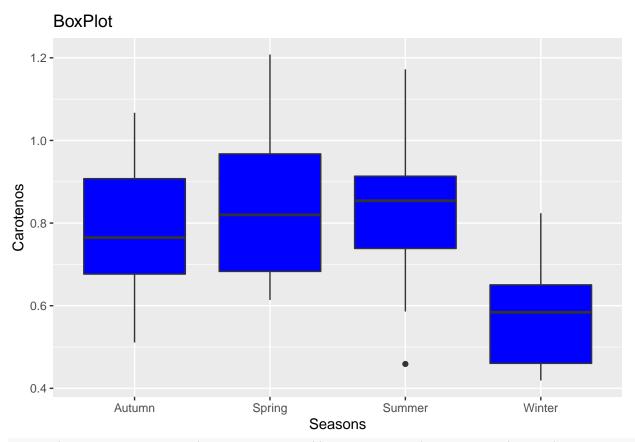
ggplot(Datos\_Proyecto, aes(x= Seasons, y=Chla))+geom\_boxplot(fill="olivedrab1")+labs(title = "BoxPlot",



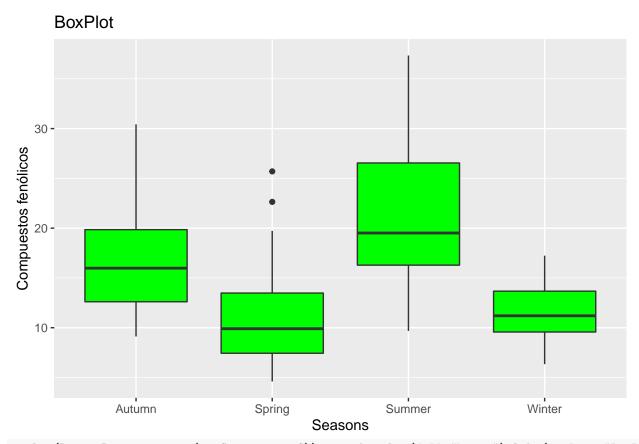
 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=Chlc))+geom\_boxplot(fill="red")+labs(title="BoxPlot",\ x="Seasons,\ y=Chlc))+geom\_boxplot(fill="red")+labs(title="BoxPlot",\ y="Seasons,\ y=Chlc))+geom\_boxplot(fill="red")+labs(title="BoxPlot",\ y="Seasons,\ y="Se$ 



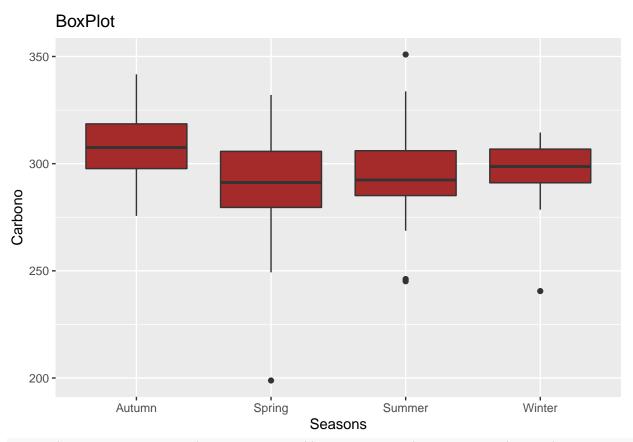
 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=Car))+geom\_boxplot(fill="blue")+labs(title="BoxPlot",\ x="Seasons,\ y=Car))+geom\_boxplot(fill="blue")+labs(title="BoxPlot",\ x="Seasons,\ y=Car))+geom\_boxplot(fill="blue")+labs(title="blue")+l$ 



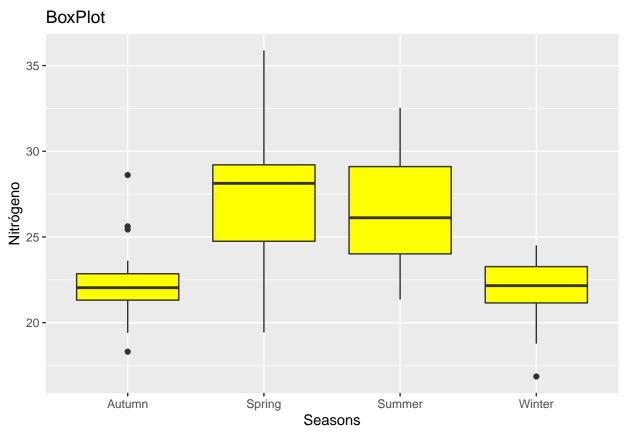
 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=PC))+geom\_boxplot(fill="green")+labs(title="BoxPlot",\ x="Seasons,\ y=PC))+geom\_boxplot(fill="green")+labs(fill="$ 



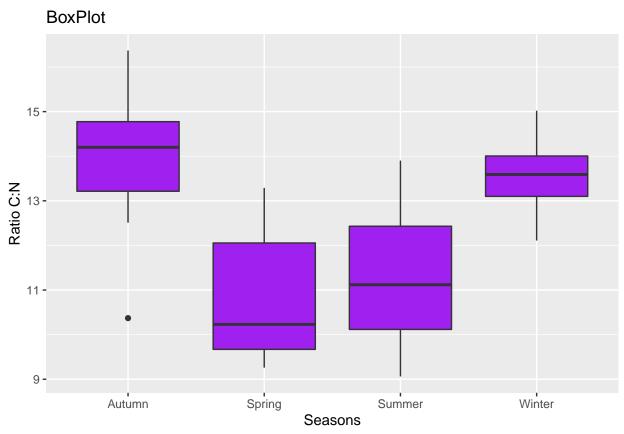
 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=C))+geom\_boxplot(fill="brown")+labs(title="BoxPlot",\ x="Seasons,\ y=C))+geom\_boxplot(fill="brown")+labs(title="BoxPlot",\ x="Seasons,\ y=C))}$ 



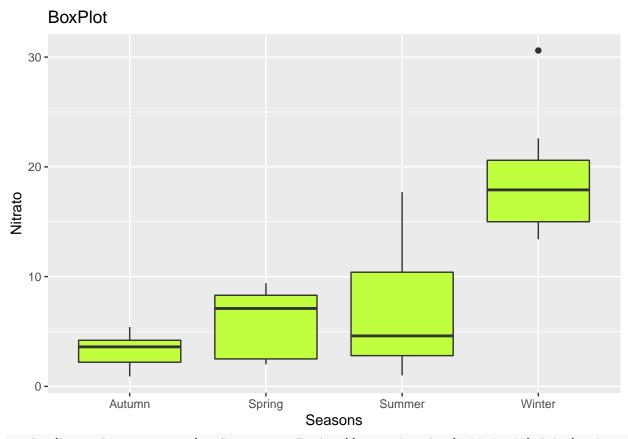
 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=N))+geom\_boxplot(fill="yellow")+labs(title="BoxPlot",\ x="Seasons,\ y=N))+geom\_boxplot(fill="yellow")+labs(title="boxPlot",\ y=N))+geom\_boxplot(fill="yellow")+geom\_boxplot(fill="yellow")+labs(title="boxplot",\ y=N))+geom\_boxplot(fill="yellow")+geom\_boxplot(fill="yellow")+geom\_boxplot(fill="yellow")+geom\_boxplot(fill="yellow")+geom\_boxplot($ 

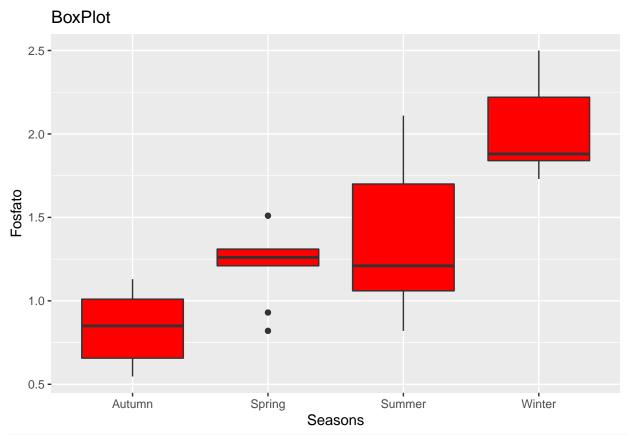


ggplot(Datos\_Proyecto, aes(x= Seasons, y=Ratio))+geom\_boxplot(fill="purple")+labs(title = "BoxPlot", x=

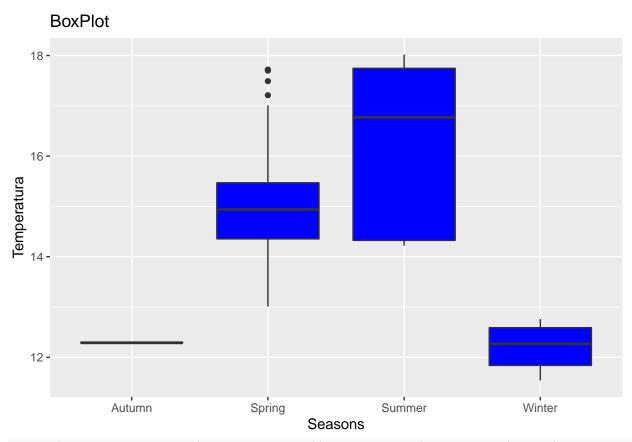


ggplot(Datos\_Proyecto, aes(x= Seasons, y=Nitrato))+geom\_boxplot(fill="olivedrab1")+labs(title = "BoxPlo")

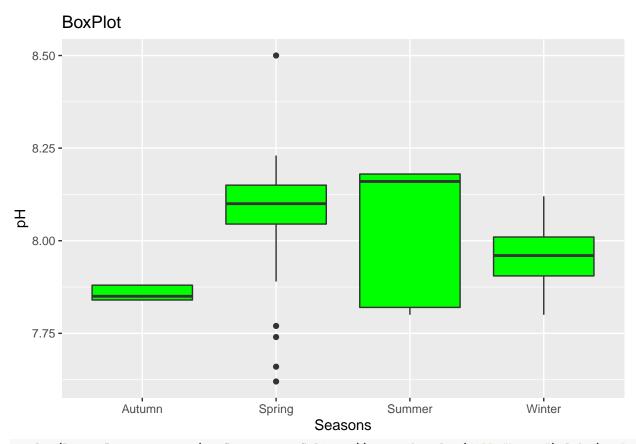




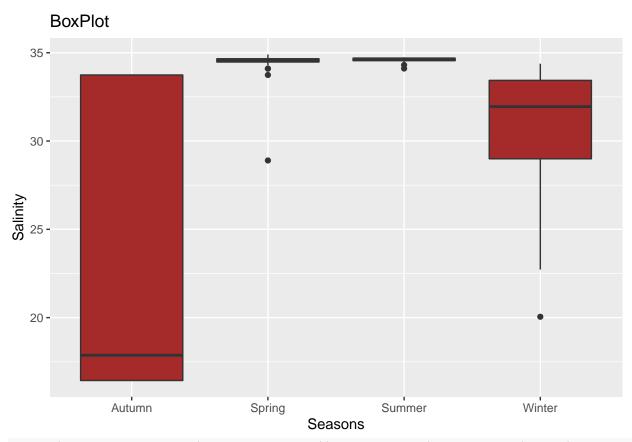
ggplot(Datos\_Proyecto, aes(x= Seasons, y=Temperature))+geom\_boxplot(fill="blue")+labs(title = "BoxPlot"

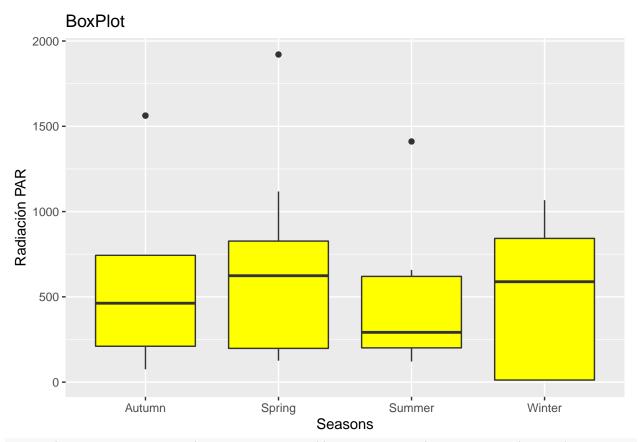


 ${\tt ggplot(Datos\_Proyecto,\ aes(x=\ Seasons,\ y=pH))+geom\_boxplot(fill="green")+labs(title="BoxPlot",\ x="Seasons,\ y=pH))+geom\_boxplot(fill="green")+labs(title="green")+labs(title="BoxPlot",\ x="Seasons,\ y=pH))+geom\_boxplot(fill="green")+labs(title="green")+labs($ 

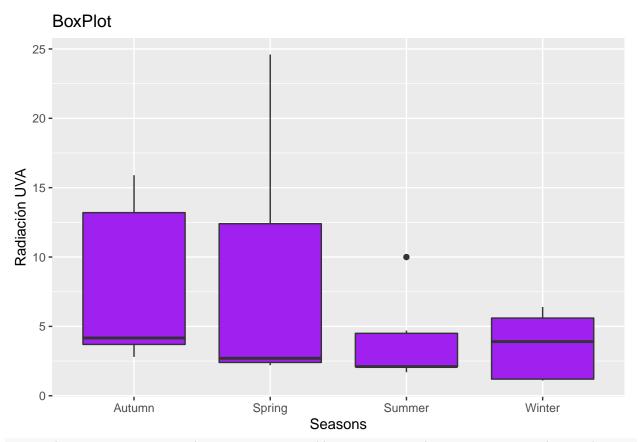


ggplot(Datos\_Proyecto, aes(x= Seasons, y=Salinity))+geom\_boxplot(fill="brown")+labs(title = "BoxPlot", seasons)

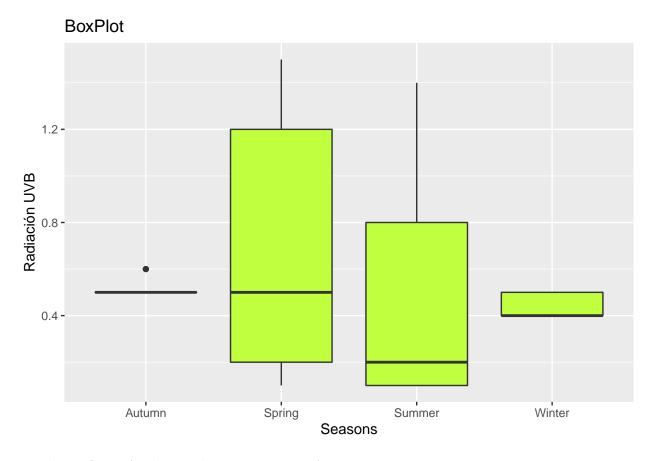




ggplot(Datos\_Proyecto, aes(x= Seasons, y=UVA))+geom\_boxplot(fill="purple")+labs(title = "BoxPlot", x= "



ggplot(Datos\_Proyecto, aes(x= Seasons, y=UVB))+geom\_boxplot(fill="olivedrab1")+labs(title = "BoxPlot", seasons)



### 6. Identificación de outliers o error atípico

Variable Chlc: para la estación winter se registra un outlier Variable Car: para la estación summer se registra un outlier Variable PC: se registra 2 valores en Spring Variable C: se registra un valor en spring y winter, y 2 valores en summer Variable N: 4 valores en Autumn y 1 en winter Variable Ratio: 1 valor en autumn Variable Nitrato: 1 valor en autumn Variable Fosfato: 3 valores en spring Variable Temperature: 3 valores en spring Variable pH: 5 valores en spring Variable Salinity: 3 valores en spring, 2 en summer y 1 en winter Variable PAR: 1 en autumn, 1 en spring y 1 en summer Variable UVA: 1 summer Variable UVB: 1 en autumn

#### 7. Resumen de los datos con tablas y estadística descriptiva

```
str(Datos_Proyecto)
## tibble [108 x 20] (S3: tbl_df/tbl/data.frame)
##
    $ Seasons
                 : Factor w/ 4 levels "Autumn", "Spring", ..: 1 1 1 1 1 1 1 1 1 1 ...
                 : Factor w/ 3 levels "day 1", "day 2",..: 1 1 1 1 1 1 1 1 2 ...
##
    $ time
                 : Factor w/ 3 levels "hora 1", "hora 2",...: 1 1 1 2 2 2 3 3 3 1 ...
##
    $ hours
##
    $ Replicate : Factor w/ 3 levels "R1", "R2", "R3": 1 2 3 1 2 3 1 2 3 1 ...
                 : num [1:108] 1.04 1.6 1.52 1.48 1.14 ...
##
    $ Chla
##
    $ Chlc
                 : num [1:108] 0.095 0.155 0.143 0.152 0.108 0.115 0.148 0.105 0.102 0.134 ...
##
    $ Car
                 : num [1:108] 0.605 0.954 0.931 0.905 0.694 0.752 0.884 0.659 0.62 0.937 ...
##
    $ PC
                 : num [1:108] 9.12 13.87 15.83 19.89 19.81 ...
    $ DPPH
                 : num [1:108] 7.58 6.08 7.81 7.02 7.2 ...
##
    $ C
                 : num [1:108] 315 316 342 330 308 ...
##
                 : num [1:108] 21.8 20.6 23.6 22.4 22.9 ...
##
    $ N
    $ Ratio
                 : num [1:108] 14.4 15.3 14.5 14.7 13.4 ...
```

```
: num [1:108] 5.1 5.1 5.1 5.4 5.4 5.4 4.2 4.2 4.2 4.2 ...
## $ Fosfato
                 : num [1:108] 0.85 0.85 0.85 1.02 1.02 1.02 1.13 1.13 1.13 1.01 ...
## $ Temperature: num [1:108] 12.3 12.3 12.3 12.3 12.3 ...
                 : num [1:108] 7.84 7.84 7.84 7.85 7.85 7.85 7.88 7.88 7.88 7.84 ...
## $ Salinity
                 : num [1:108] 33.7 33.7 33.7 17.9 17.9 ...
## $ PAR
                 : num [1:108] 594 594 594 1563 1563 ...
## $ UVA
                 : num [1:108] 4.17 4.17 4.17 15.9 15.9 ...
                 : num [1:108] 0.5 0.5 0.5 0.6 0.6 0.6 0.5 0.5 0.5 0.5 ...
## $ UVB
Datos_Proyecto$Seasons <- as.factor(Datos_Proyecto$Seasons)</pre>
Datos_Proyecto$time <- as.factor(Datos_Proyecto$time)</pre>
Datos_Proyecto$hours <- as.factor(Datos_Proyecto$hours)</pre>
Datos_Proyecto$Replicate <- as.factor(Datos_Proyecto$Replicate)</pre>
table(Datos_Proyecto$Seasons, Datos_Proyecto$time, Datos_Proyecto$hours, Datos_Proyecto$Replicate, Dato
## , , = hora 1, = R1, = 0.673
##
##
##
            day 1 day 2 day 3
##
     Autumn
                0
                      0
##
     Spring
                0
                      0
                             0
##
     Summer
                0
                      0
##
     Winter
                      0
##
##
  , , = hora 2, = R1, = 0.673
##
##
##
            day 1 day 2 day 3
##
     Autumn
                0
                      0
                      0
                             0
##
     Spring
                0
                             0
##
     Summer
                      0
##
     Winter
                      0
                             0
                0
##
  , , = hora 3, = R1, = 0.673
##
##
##
##
            day 1 day 2 day 3
##
                      0
     Autumn
                0
                      0
                             0
     Spring
                0
                      0
                             0
##
     Summer
                0
     Winter
                      0
##
                0
##
##
  , , = hora 1, = R2, = 0.673
##
##
##
            day 1 day 2 day 3
##
                0
                      0
     Autumn
##
     Spring
                0
                       0
                             0
##
     Summer
                0
                       0
                             0
##
     Winter
                      0
##
##,, = hora 2, = R2, = 0.673
```

## ##

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.673
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
##,, = hora 1, = R3, = 0.673
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.673
##
##
##
      day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 0.673
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.745
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R1, = 0.745
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.745
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        1

##
##
##
##
## , , = hora 1, = R2, = 0.745
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.745
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.745
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.745
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.745
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.745
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 0.769
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 1
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.769
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.769
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 0.769
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R2, = 0.769
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.769
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.769
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.769
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.769
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.786
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 1 0
##
##
##,, = hora 2, = R1, = 0.786
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.786
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 0.786
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.786
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.786
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 0.786
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R3, = 0.786
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.786
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 0.808
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 1 0 0
##
##,, = hora 2, = R1, = 0.808
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.808
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
##,, = hora 1, = R2, = 0.808
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R2, = 0.808
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.808
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.808
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.808
##
##
##
      day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 1
##
##
##
## , , = hora 3, = R3, = 0.808
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.815
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R1, = 0.815
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.815
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 0.815
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 1
##
##
##,, = hora 2, = R2, = 0.815
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.815
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.815
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 0.815
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.815
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 0.816
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.816
##
##
##
      day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.816
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 1 0 0
##
##
\#\# , , = hora 1, = R2, = 0.816
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R2, = 0.816
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.816
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.816
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.816
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 0.816
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.825
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.825
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.825
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
##,, = hora 1, = R2, = 0.825
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.825
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.825
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.825
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.825
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 0.825
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        1

##
##
##
##
## , , = hora 1, = R1, = 0.826
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.826
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.826
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
##,, = hora 1, = R2, = 0.826
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.826
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.826
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.826
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.826
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 1 0 0
##
##
##
## , , = hora 3, = R3, = 0.826
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.832
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.832
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.832
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 0.832
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.832
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.832
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 1
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.832
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 0.832
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 0.832
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 0.835
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.835
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.835
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R2, = 0.835
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 1 0
##
##
##,, = hora 2, = R2, = 0.835
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.835
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.835
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.835
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.835
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.855
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R1, = 0.855
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.855
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 0.855
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.855
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.855
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.855
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 1 0
##
##
##,, = hora 2, = R3, = 0.855
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 0.855
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 0.864
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.864
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.864
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R2, = 0.864
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R2, = 0.864
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.864
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.864
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 1 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.864
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.864
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.869
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.869
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.869
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 0.869
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 1 0 0
##
##,, = hora 2, = R2, = 0.869
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.869
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.869
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 2, = R3, = 0.869
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 0.869
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 0.87
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 0.87
##
##
##
      day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.87
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 0.87
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 2, = R2, = 0.87
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 0.87
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        1
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 0.87
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 0.87
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.87
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.882
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.882
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.882
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 0.882
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.882
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 1 0 0
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##
## , , = hora 3, = R2, = 0.882
##
##
     day 1 day 2 day 3
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##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 0.882
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.882
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day 1 day 2 day 3
##
    Autumn 0 0 0
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##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R3, = 0.882
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
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##
##
## , , = hora 1, = R1, = 0.883
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
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##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.883
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
## , , = hora 3, = R1, = 0.883
##
##
     day 1 day 2 day 3
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##
    Autumn 0 0 0
            0 0
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    Spring
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    Summer 0 0 0
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##
## , , = hora 1, = R2, = 0.883
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##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
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##,, = hora 2, = R2, = 0.883
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day 1 day 2 day 3
##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R2, = 0.883
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        0
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        Summer
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        Winter
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## , , = hora 1, = R3, = 0.883
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     day 1 day 2 day 3
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   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 1 0 0
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##,, = hora 2, = R3, = 0.883
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 0.883
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##
     day 1 day 2 day 3
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##
    Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.903
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.903
##
##
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```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 0.903
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        1
        0

##
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##
##
## , , = hora 1, = R2, = 0.903
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
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##
    Summer 0 0 0
    Winter 0 0 0
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##
##,, = hora 2, = R2, = 0.903
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 0.903
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     day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
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    Summer 0 0 0
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##
## , , = hora 1, = R3, = 0.903
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    day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R3, = 0.903
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day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R3, = 0.903
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        0
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        Summer
        0
        0
        0

        Winter
        0
        0
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##
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##
##
## , , = hora 1, = R1, = 0.913
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.913
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
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##
\#\# , , = hora 3, = R1, = 0.913
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##
     day 1 day 2 day 3
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##
   Autumn 0 0 0
             0 0
##
    Spring
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    Summer 0 0 0
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##
## , , = hora 1, = R2, = 0.913
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
             0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R2, = 0.913
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day 1 day 2 day 3
##
    Autumn 0 0 0
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##
    Spring 1 0
    Summer 0 0 0 0 Winter 0 0 0
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##,, = hora 3, = R2, = 0.913
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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\#\# , , = hora 1, = R3, = 0.913
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     day 1 day 2 day 3
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   Autumn 0 0 0 0 Spring 0 0 0
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    Summer 0 0 0
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##,, = hora 2, = R3, = 0.913
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## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 0.913
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     day 1 day 2 day 3
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    Spring
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    Summer 0 0 0
   Winter 0 0 0
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\#\# , , = hora 1, = R1, = 0.919
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    day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring
             0 0
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    Summer 0 0 0
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## , , = hora 2, = R1, = 0.919
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day 1 day 2 day 3
##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##,, = hora 3, = R1, = 0.919
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##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Summer
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        Winter
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## , , = hora 1, = R2, = 0.919
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     day 1 day 2 day 3
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    Summer 0 0 0
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    Spring 0 0
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
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## , , = hora 2, = R3, = 0.919
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day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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    day 1 day 2 day 3
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   Autumn 0 0 0

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        Summer
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## , , = hora 1, = R1, = 0.929
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     day 1 day 2 day 3
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    Summer 0 0 0
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
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day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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    day 1 day 2 day 3
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   Autumn 0 0 0

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    Summer 0 0 0
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## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 0.929
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     day 1 day 2 day 3
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   Autumn 0 0 0
            0 0
##
    Spring
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    Summer 0 0 0
   Winter 1 0 0
##
##
\#\# , , = hora 1, = R1, = 0.936
##
##
    day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.936
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day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
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##,, = hora 3, = R1, = 0.936
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
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        Summer
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        0

        Winter
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        0

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## , , = hora 1, = R2, = 0.936
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     day 1 day 2 day 3
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   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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     day 1 day 2 day 3
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    Autumn 0 0 0
    Spring
             0 0
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    Summer 0 0 0
   Winter 0 0 0
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## , , = hora 1, = R3, = 0.936
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    day 1 day 2 day 3
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##
    Autumn 0 0 0
             0 0
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    Spring
    Summer 1 0 0 Winter 0 0 0
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##,, = hora 2, = R3, = 0.936
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day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 0.936
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##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Summer
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        0
        0

        Winter
        0
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##
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##
## , , = hora 1, = R1, = 0.943
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.943
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 1 0
Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 0.943
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
##,, = hora 1, = R2, = 0.943
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.943
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day 1 day 2 day 3
##
    Autumn 0 0 0
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##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R2, = 0.943
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Summer
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        Winter
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##,, = hora 1, = R3, = 0.943
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     day 1 day 2 day 3
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   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R3, = 0.943
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 0.943
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     day 1 day 2 day 3
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    Autumn 0 0 0
            0 0
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    Spring
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    Summer 0 0 0
   Winter 0 0 0
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##
## , , = hora 1, = R1, = 0.953
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R1, = 0.953
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day 1 day 2 day 3
##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R1, = 0.953
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Summer
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        Winter
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## , , = hora 1, = R2, = 0.953
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     day 1 day 2 day 3
##
   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R2, = 0.953
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 0.953
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     day 1 day 2 day 3
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    Autumn 0 1 0
            0 0
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    Spring
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    Summer 0 0 0
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## , , = hora 1, = R3, = 0.953
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R3, = 0.953
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day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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    day 1 day 2 day 3
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   Autumn 0 0 0

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        Winter
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## , , = hora 1, = R1, = 0.954
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     day 1 day 2 day 3
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   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
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##,, = hora 2, = R1, = 0.954
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 1 0 0
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## , , = hora 3, = R1, = 0.954
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     day 1 day 2 day 3
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    Autumn 0 0 0
    Spring
            0 0
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    Summer 0 0 0
   Winter 0 0 0
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##,, = hora 1, = R2, = 0.954
##
##
    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R2, = 0.954
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day 1 day 2 day 3
##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##,, = hora 3, = R2, = 0.954
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##
    day 1 day 2 day 3
##
   Autumn 0 0 0

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##,, = hora 1, = R3, = 0.954
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     day 1 day 2 day 3
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   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
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##,, = hora 2, = R3, = 0.954
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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\#\# , , = hora 3, = R3, = 0.954
##
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     day 1 day 2 day 3
##
##
    Autumn 0 0 0
            0 0
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    Spring
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    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 0.967
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 0.967
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day 1 day 2 day 3
##
    Autumn 0 0 0
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##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
##,, = hora 3, = R1, = 0.967
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Summer
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        Winter
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## , , = hora 1, = R2, = 0.967
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 1
##
    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R2, = 0.967
##
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 0.967
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     day 1 day 2 day 3
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    Autumn 0 0 0
    Spring
            0 0
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    Summer 0 0 0
   Winter 0 0 0
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## , , = hora 1, = R3, = 0.967
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R3, = 0.967
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day 1 day 2 day 3
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##
    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
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##
## , , = hora 3, = R3, = 0.967
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        Winter
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## , , = hora 1, = R1, = 0.996
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##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
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##
    Summer 0 0 0
    Winter 0 0 1
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##
##,, = hora 2, = R1, = 0.996
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##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
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##
## , , = hora 3, = R1, = 0.996
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R2, = 0.996
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 0.996
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 0.996
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 0.996
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 0.996
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 0.996
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R1, = 1
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 1
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 1, = R3, = 1
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
              0 0
##
    Summer
          0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1
##
##
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```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.005
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.005
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.005
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 1
    Spring
            0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.005
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
              0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.005
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.005
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.005
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.005
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.005
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.006
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.006
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.006
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.006
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.006
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.006
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.006
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.006
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.006
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        1
        0

##
##
##
##
## , , = hora 1, = R1, = 1.009
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.009
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.009
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.009
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.009
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.009
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.009
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.009
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.009
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 1 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.013
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.013
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.013
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.013
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.013
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 1
##
##
##
## , , = hora 3, = R2, = 1.013
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.013
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.013
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.013
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.021
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.021
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 1
##
##
##
## , , = hora 3, = R1, = 1.021
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            1 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.021
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.021
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.021
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.021
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.021
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.021
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.034
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.034
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 1 0
##
##
##
## , , = hora 3, = R1, = 1.034
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.034
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.034
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.034
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.034
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.034
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.034
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.036
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.036
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.036
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.036
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.036
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.036
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.036
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 1 0 0
##
##
    Summer 0 0 0
##
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.036
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.036
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.038
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.038
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.038
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.038
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.038
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.038
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 1
##
##
\#\# , , = hora 1, = R3, = 1.038
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.038
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.038
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.04
##
##
     day 1 day 2 day 3
##
   Autumn 1 0 0
Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.04
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.04
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.04
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
## , , = hora 2, = R2, = 1.04
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.04
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.04
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.04
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.04
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 1
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.058
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 1
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.058
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.058
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.058
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.058
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 1 0
##
##
##
## , , = hora 3, = R2, = 1.058
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.058
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.058
##
##
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```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.058
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.063
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.063
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.063
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.063
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.063
##
##
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```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.063
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
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        Summer
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        0
        0

        Winter
        0
        0
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##
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##
##
## , , = hora 1, = R3, = 1.063
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 1 0
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##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.063
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.063
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.065
##
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    day 1 day 2 day 3
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##
    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##
##,, = hora 2, = R1, = 1.065
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day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
##
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##
## , , = hora 3, = R1, = 1.065
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
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        0
        0

        Winter
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        0
        0

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##
## , , = hora 1, = R2, = 1.065
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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##
##,, = hora 2, = R2, = 1.065
##
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     day 1 day 2 day 3
   Autumn 0 0 0
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    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 1.065
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
            1 0
    Spring
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.065
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.065
##
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day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.065
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.074
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.074
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.074
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.074
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.074
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.074
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.074
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.074
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.074
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.084
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.084
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.084
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.084
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.084
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.084
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.084
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.084
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.084
##
##
    day 1 day 2 day 3
##
   Autumn 1 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.108
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.108
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.108
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.108
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.108
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.108
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.108
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 1
##
##
##,, = hora 2, = R3, = 1.108
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.108
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.118
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
## , , = hora 2, = R1, = 1.118
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.118
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.118
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.118
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.118
##
##
     day 1 day 2 day 3
##
## Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.118
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
## , , = hora 2, = R3, = 1.118
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.118
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        1
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.127
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 1 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.127
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.127
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.127
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.127
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.127
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
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        Summer
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        0

        Winter
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##
##
##
##
## , , = hora 1, = R3, = 1.127
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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##
##,, = hora 2, = R3, = 1.127
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 1.127
##
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     day 1 day 2 day 3
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   Autumn 0 0 0
    Spring
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    Summer 0 0 0
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##
\#\# , , = hora 1, = R1, = 1.136
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
## , , = hora 2, = R1, = 1.136
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day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
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##
## , , = hora 3, = R1, = 1.136
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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## , , = hora 1, = R2, = 1.136
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     day 1 day 2 day 3
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    Winter 0 0 0
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##,, = hora 2, = R2, = 1.136
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 1.136
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     day 1 day 2 day 3
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    Autumn 0 0 0
    Spring
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    Summer 0 0 0
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\#\# , , = hora 1, = R3, = 1.136
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
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##,, = hora 2, = R3, = 1.136
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day 1 day 2 day 3
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    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R3, = 1.136
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     day 1 day 2 day 3
##
   Autumn 0 0 0

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## , , = hora 1, = R1, = 1.137
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     day 1 day 2 day 3
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## , , = hora 2, = R1, = 1.137
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     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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     day 1 day 2 day 3
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    Summer 0 0 0
   Winter 0 0 0
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\#\# , , = hora 1, = R2, = 1.137
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
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##,, = hora 2, = R2, = 1.137
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day 1 day 2 day 3
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    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R2, = 1.137
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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## , , = hora 1, = R3, = 1.137
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     day 1 day 2 day 3
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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     day 1 day 2 day 3
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    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
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\#\# , , = hora 3, = R3, = 1.137
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     day 1 day 2 day 3
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    Autumn 0 0 0
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    Summer 0 0 0
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\#\# , , = hora 1, = R1, = 1.139
##
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    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R1, = 1.139
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day 1 day 2 day 3
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    Autumn 0 0 0
    Spring 0 0
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    Summer 0 0 0 0 Winter 0 0 0
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## , , = hora 3, = R1, = 1.139
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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     day 1 day 2 day 3
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    Spring 0 0 0
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    Summer 0 0 0
    Winter 0 0 0
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     day 1 day 2 day 3
## Autumn 1 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
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     day 1 day 2 day 3
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   Autumn 0 0 0
    Spring
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    Summer 0 0 0
   Winter 0 0 0
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\#\# , , = hora 1, = R3, = 1.139
##
##
    day 1 day 2 day 3
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    Autumn 0 0 0
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    Spring
            0 0
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    Summer 0 0 0
    Winter 0 0 0
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##,, = hora 2, = R3, = 1.139
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day 1 day 2 day 3
##
##
    Autumn 0 0 0
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    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
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##
## , , = hora 3, = R3, = 1.139
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
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        0

        Summer
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        Winter
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##
##
\#\# , , = hora 1, = R1, = 1.14
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.14
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.14
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.14
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.14
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R2, = 1.14
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.14
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.14
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.14
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 1
    Spring
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.166
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.166
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.166
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.166
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.166
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.166
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.166
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 1
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.166
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 1 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.166
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.173
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.173
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.173
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.173
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.173
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.173
##
##
     day 1 day 2 day 3
##
   Autumn 1 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.173
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.173
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.173
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.176
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.176
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.176
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.176
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.176
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.176
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.176
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.176
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.176
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 1

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.182
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.182
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.182
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.182
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 1 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.182
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.182
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.182
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.182
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.182
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.184
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.184
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 1 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.184
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.184
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.184
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.184
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.184
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.184
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.184
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.188
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.188
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.188
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.188
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.188
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.188
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        1
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.188
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.188
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.188
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.19
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.19
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.19
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 1.19
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 1 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.19
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R2, = 1.19
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.19
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.19
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.19
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.191
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.191
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.191
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 1
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.191
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.191
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.191
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.191
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.191
##
##
##
      day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.191
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.192
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
    Summer 1 0 0 Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.192
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.192
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.192
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.192
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.192
##
##
     day 1 day 2 day 3
##
## Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.192
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.192
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 1.192
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.199
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.199
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.199
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 1 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.199
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.199
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.199
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.199
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.199
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.199
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.202
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.202
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.202
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.202
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.202
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 1
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.202
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.202
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.202
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.202
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.21
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.21
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.21
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.21
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.21
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 1 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.21
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        1
        1
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.21
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.21
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.21
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.222
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.222
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.222
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.222
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.222
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 1
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.222
##
##
     day 1 day 2 day 3
##
## Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.222
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.222
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.222
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.245
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.245
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.245
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.245
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.245
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.245
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.245
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.245
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 1 0
##
##
##
## , , = hora 3, = R3, = 1.245
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
            0 0
##
    Spring
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.256
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.256
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.256
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.256
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.256
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.256
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.256
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 1 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.256
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.256
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.278
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.278
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.278
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.278
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.278
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.278
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        1

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.278
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.278
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.278
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.289
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.289
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.289
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.289
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 1 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.289
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.289
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.289
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.289
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.289
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.298
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.298
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.298
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.298
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.298
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.298
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.298
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.298
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 1 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.298
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.31
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.31
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.31
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 1.31
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.31
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R2, = 1.31
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.31
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 1
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.31
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.31
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.319
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.319
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.319
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.319
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 1 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.319
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.319
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.319
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.319
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.319
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.322
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.322
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.322
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.322
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.322
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.322
##
##
     day 1 day 2 day 3
##
## Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.322
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.322
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 1 0
Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.322
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.329
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.329
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.329
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.329
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.329
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 1 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.329
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.329
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.329
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.329
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.345
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.345
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.345
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        1
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.345
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.345
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.345
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.345
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.345
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.345
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.38
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.38
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.38
##
##
     day 1 day 2 day 3
##
##
    Autumn 1 0 0
            0 0
    Spring
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R2, = 1.38
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.38
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.38
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.38
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.38
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.38
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.385
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.385
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.385
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 1.385
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.385
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.385
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.385
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.385
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 1
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.385
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.4
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.4
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.4
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
             0 0
##
    Spring
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.4
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.4
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.4
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.4
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.4
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.4
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 1 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.414
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.414
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.414
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.414
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.414
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.414
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.414
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.414
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 1.414
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.432
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.432
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.432
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.432
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.432
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 1 0
Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.432
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.432
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.432
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.432
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.479
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.479
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 1 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.479
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.479
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.479
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.479
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.479
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.479
##
##
```

```
day 1 day 2 day 3
##
    Autumn 0 0 0
##
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R3, = 1.479
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.491
##
##
     day 1 day 2 day 3
##
   Autumn 0 1 0
Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.491
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.491
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.491
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.491
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.491
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.491
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.491
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.491
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.501
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 1
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.501
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.501
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.501
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.501
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.501
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.501
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.501
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.501
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.513
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.513
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.513
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.513
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 1
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.513
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.513
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.513
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0 0 Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.513
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.513
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.521
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R1, = 1.521
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R1, = 1.521
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.521
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.521
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.521
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.521
##
##
    day 1 day 2 day 3
##
##
    Autumn 1 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.521
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.521
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.526
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.526
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.526
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.526
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.526
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R2, = 1.526
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.526
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.526
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 1
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.526
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.531
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.531
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 1
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.531
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.531
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.531
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.531
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.531
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.531
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.531
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.547
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.547
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 1
Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.547
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.547
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.547
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
##,, = hora 3, = R2, = 1.547
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.547
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.547
##
##
##
     day 1 day 2 day 3
## Autumn 0 1 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.547
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.555
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.555
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.555
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 1.555
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.555
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.555
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
## , , = hora 1, = R3, = 1.555
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.555
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 1 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.555
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.558
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.558
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.558
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.558
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.558
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.558
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.558
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.558
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 1
Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.558
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.578
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.578
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.578
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R2, = 1.578
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.578
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 1
Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R2, = 1.578
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.578
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.578
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.578
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.591
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.591
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 1
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.591
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.591
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.591
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.591
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.591
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R3, = 1.591
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.591
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.597
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.597
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.597
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.597
##
##
     day 1 day 2 day 3
##
   Autumn 1 0 0
Spring 0 0 0
##
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.597
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.597
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.597
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
             0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.597
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.597
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R1, = 1.611
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.611
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.611
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.611
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
## , , = hora 2, = R2, = 1.611
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.611
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.611
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 1
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.611
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.611
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.616
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 1 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R1, = 1.616
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.616
##
##
    day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.616
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
## , , = hora 2, = R2, = 1.616
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
   Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.616
##
##
     day 1 day 2 day 3
##
##
   Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.616
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.616
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.616
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.635
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.635
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.635
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 1 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.635
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.635
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.635
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.635
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.635
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.635
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.677
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.677
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.677
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.677
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.677
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.677
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.677
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.677
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.677
##
##
     day 1 day 2 day 3
##
   Autumn 0 1 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.699
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.699
##
##
     day 1 day 2 day 3
## Autumn 0 1 0
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.699
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.699
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.699
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.699
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R3, = 1.699
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 0 0 0
##
##,, = hora 2, = R3, = 1.699
##
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R3, = 1.699
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.707
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.707
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.707
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        1

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.707
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
##
    Winter 0 0 0
##
##,, = hora 2, = R2, = 1.707
##
##
##
     day 1 day 2 day 3
   Autumn 0 0 0
##
    Spring 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.707
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
             0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.707
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
              0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.707
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.707
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R1, = 1.839
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.839
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
\#\# , , = hora 3, = R1, = 1.839
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R2, = 1.839
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.839
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.839
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
\#\# , , = hora 1, = R3, = 1.839
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 0
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.839
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R3, = 1.839
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R1, = 1.969
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R1, = 1.969
##
##
```

```
day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring 0 0
##
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R1, = 1.969
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0

        Spring
        0
        0
        0

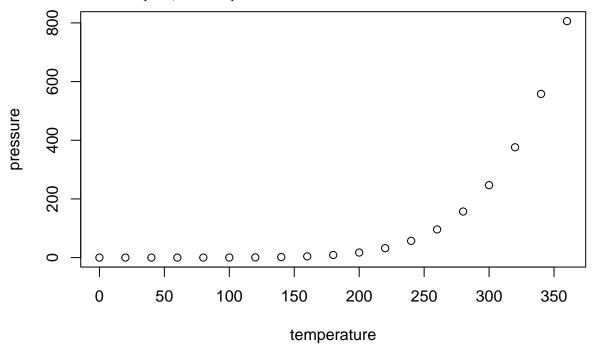
        Summer
        0
        0
        0

        Winter
        0
        0
        0

##
##
##
##
## , , = hora 1, = R2, = 1.969
##
##
     day 1 day 2 day 3
##
   Autumn 0 0 0
##
    Spring 0 0 1
##
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R2, = 1.969
##
##
     day 1 day 2 day 3
## Autumn 0 0 0
    Spring 0 0 0
    Summer 0 0 0 0 Winter 0 0 0
##
##
##
## , , = hora 3, = R2, = 1.969
##
##
     day 1 day 2 day 3
##
##
    Autumn 0 0 0
    Spring
            0 0
##
##
    Summer 0 0 0
   Winter 0 0 0
##
##
\#\# , , = hora 1, = R3, = 1.969
##
##
    day 1 day 2 day 3
##
##
    Autumn 0 0 0
##
    Spring
            0 0
##
    Summer 0 0 0
    Winter 0 0 0
##
##
##,, = hora 2, = R3, = 1.969
##
##
```

```
##
             day 1 day 2 day 3
##
     Autumn
                         0
##
     Spring
                         0
                               0
##
     Summer
                  0
                        0
                               0
     Winter
                  0
                        0
##
##
        = hora 3,
                     = R3,
##
##
##
##
             day 1 day 2 day 3
##
     Autumn
                  0
                         0
##
     Spring
                  0
                        0
                               0
##
     Summer
                  0
                        0
                               0
                        0
     Winter
                               0
##
```

 $\lq\lq\lq$  You can also embed plots, for example:



Note that the echo = FALSE parameter was added to the code chunk to prevent printing of the R code that generated the plot.