

movement__ssf.R

bebs0001

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Loading movement and background data

First of all, we load the data that was already organized and cleaned in another step. We're working here with data from four white-lipped peccary individuals (from four different groups) from the Parque Nacional das Emmas, within the Brazilian Cerrado. We also load land use maps (that will be used here for the habitat selection analysis), rasterize and merge them in two rasters: one with land use classes, and another with the date when the sugarcane and corn plantations were cropped.

```
# Set up

# Clean everything before beginning
rm(list = ls())

# Load packages
install.load::install_load('tidyverse', 'ggribes', 'lubridate')
install.load::install_load('sf', 'fasterize', 'raster')
install.load::install_load('broom', 'bbmle')
install.load::install_load('amt')
```

Load movement data

```
# Load movement data
load('data/movement_data_loaded.RData')
```

Load spatial data

```
# land use classes
lu.classes <- c('Campo Seco', 'Campo Úmido', 'Cana-de-Açúcar',
               'Cerrado', 'Mata de Galeria', 'Milho - Safrinha',
               'Solo Exposto', 'Não Disponível - Vala')

# alto formoso
map.alto.formoso <- sf::st_read(dsn = 'maps/Alto_Formoso', layer = 'alto_formoso') %>%
  dplyr::rename(uso_terra = CLASS_D_19) %>%
  dplyr::mutate(data.colheita = lubridate::ymd(DATA_COLHE) + days(1),
               julian = julian(data.colheita),
               name = 'Alto Formoso',
               classe = factor(uso_terra, levels = lu.classes),
               classe.num = factor(classe, levels = lu.classes, labels = 1:length(lu.classes)) %>% as.numeric())
dplyr::select(-DATA_COLHE)

## Reading layer `alto_formoso' from data source `C:\Users\bebs0001\Documents\Movimento_Queixadas_PNEma
## Simple feature collection with 3833 features and 2 fields
## geometry type:  MULTIPOLYGON
## dimension:      XY
## bbox:           xmin: 305195.3 ymin: 7967433 xmax: 327427.9 ymax: 7982940
```

```
## epsg (SRID):      NA
## proj4string:      +proj=utm +zone=22 +south +ellps=GRS80 +units=m +no_defs
```

```
# Check
```

```
map.alto.formoso$uso_terra
```

##	[1]	Cerrado	Cerrado	Campo Seco	Campo Seco
##	[5]	Cerrado	Cerrado	Cerrado	Campo Úmido
##	[9]	Mata de Galeria	Cerrado	Milho - Safrinha	Cerrado
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## [1073]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
## [1077]	Cerrado	Campo Úmido	Campo Seco	Campo Seco
## [1081]	Cerrado	Campo Úmido	Cerrado	Campo Seco
## [1085]	Cerrado	Campo Seco	Cana-de-Açúcar	Cerrado
## [1089]	Campo Seco	Campo Úmido	Campo Seco	Cerrado
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## [1105]	Mata de Galeria	Campo Seco	Cerrado	Campo Úmido
## [1109]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [1113]	Campo Úmido	Campo Seco	Cerrado	Cerrado
## [1117]	Campo Úmido	Mata de Galeria	Campo Seco	Mata de Galeria
## [1121]	Campo Úmido	Campo Seco	Campo Úmido	Campo Seco
## [1125]	Cerrado	Campo Seco	Campo Seco	Cerrado
## [1129]	Campo Seco	Campo Úmido	Campo Úmido	Campo Úmido
## [1133]	Campo Úmido	Mata de Galeria	Campo Seco	Campo Seco
## [1137]	Campo Seco	Campo Úmido	Campo Seco	Cerrado
## [1141]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [1145]	Campo Seco	Campo Úmido	Campo Seco	Cerrado
## [1149]	Campo Úmido	Campo Seco	Campo Seco	Mata de Galeria
## [1153]	Mata de Galeria	Cerrado	Campo Seco	Campo Úmido
## [1157]	Cerrado	Campo Seco	Campo Úmido	Campo Seco
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## [1165]	Campo Seco	Cerrado	Campo Seco	Campo Seco
## [1169]	Cerrado	Cerrado	Campo Úmido	Campo Seco
## [1173]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [1177]	Campo Seco	Mata de Galeria	Cerrado	Cerrado
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## [1189]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
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## [1197]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [1201]	Campo Úmido	Cerrado	Milho - Safrinha	Campo Seco
## [1205]	Campo Úmido	Campo Úmido	Campo Úmido	Campo Seco
## [1209]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
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## [1229]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
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## [1237]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
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## [1253]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
## [1257]	Campo Seco	Cerrado	Campo Seco	Cerrado
## [1261]	Campo Úmido	Campo Seco	Mata de Galeria	Cerrado
## [1265]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [1269]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [1277]	Cerrado	Campo Seco	Campo Seco	Campo Seco
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## [1293]	Campo Seco	Campo Seco	Cana-de-Açúcar	Cerrado
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## [1309]	Campo Seco	Cerrado	Campo Seco	Campo Seco
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## [1345]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
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## [1353]	Campo Úmido	Campo Úmido	Campo Seco	Campo Seco
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## [1385]	Cana-de-Açúcar	Campo Seco	Campo Seco	Campo Úmido
## [1389]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [1393]	Campo Úmido	Campo Seco	Mata de Galeria	Campo Úmido
## [1397]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
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## [1405]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
## [1409]	Campo Úmido	Campo Úmido	Campo Seco	Campo Seco
## [1413]	Campo Úmido	Campo Úmido	Mata de Galeria	Campo Seco
## [1417]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
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## [1425]	Campo Seco	Campo Úmido	Cerrado	Campo Seco
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## [1437]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [1441]	Campo Úmido	Campo Úmido	Campo Seco	Cana-de-Açúcar
## [1445]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1449]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
## [1453]	Campo Úmido	Campo Úmido	Campo Seco	Campo Seco
## [1457]	Campo Seco	Campo Úmido	Cerrado	Cana-de-Açúcar
## [1461]	Campo Seco	Campo Úmido	Campo Úmido	Campo Úmido
## [1465]	Campo Seco	Cana-de-Açúcar	Campo Úmido	Campo Úmido
## [1469]	Campo Úmido	Campo Úmido	Campo Úmido	Campo Seco
## [1473]	Cana-de-Açúcar	Campo Úmido	Campo Úmido	Campo Seco
## [1477]	Campo Úmido	Campo Úmido	Campo Úmido	Campo Seco
## [1481]	Campo Úmido	Mata de Galeria	Cerrado	Campo Úmido
## [1485]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [1489]	Campo Úmido	Campo Seco	Campo Seco	Campo Úmido

## [1493]	Campo Seco	Campo Úmido	Campo Seco	Campo Úmido
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## [1505]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1509]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
## [1513]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [1517]	Campo Úmido	Campo Úmido	Cerrado	Campo Seco
## [1521]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [1525]	Campo Seco	Campo Úmido	Campo Úmido	Campo Seco
## [1529]	Cana-de-Açúcar	Cerrado	Campo Úmido	Campo Úmido
## [1533]	Campo Úmido	Campo Seco	Campo Úmido	Campo Seco
## [1537]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1541]	Campo Seco	Cerrado	Campo Seco	Campo Úmido
## [1545]	Campo Úmido	Campo Úmido	Campo Seco	Campo Seco
## [1549]	Campo Úmido	Milho - Safrinha	Campo Seco	Campo Úmido
## [1553]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1557]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1561]	Mata de Galeria	Campo Seco	Campo Seco	Cerrado
## [1565]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
## [1569]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
## [1573]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
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## [1585]	Campo Seco	Campo Seco	Campo Seco	Cerrado
## [1589]	Campo Úmido	Campo Seco	Campo Seco	Cana-de-Açúcar
## [1593]	Campo Seco	Campo Seco	Milho - Safrinha	Campo Seco
## [1597]	Campo Úmido	Campo Seco	Campo Úmido	Cerrado
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## [1641]	Campo Seco	Campo Úmido	Campo Seco	Campo Úmido
## [1645]	Cerrado	Campo Úmido	Cerrado	Cerrado
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## [1689]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
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## [1697]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
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## [1705]	Campo Seco	Campo Seco	Campo Seco	Campo Seco

## [1709]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
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## [1717]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [1725]	Solo Exposto	Campo Úmido	Campo Úmido	Campo Seco
## [1729]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [1733]	Campo Seco	Campo Úmido	Campo Úmido	Campo Úmido
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## [1741]	Campo Seco	Milho - Safrinha	Campo Seco	Campo Seco
## [1745]	Campo Seco	Cerrado	Campo Úmido	Campo Seco
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## [1769]	Campo Seco	Campo Seco	Campo Úmido	Campo Úmido
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## [1793]	Campo Seco	Campo Seco	Campo Úmido	Cerrado
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## [1833]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
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## [1841]	Campo Seco	Campo Seco	Campo Úmido	Campo Úmido
## [1845]	Milho - Safrinha	Campo Seco	Campo Seco	Campo Seco
## [1849]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
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## [1873]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
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## [1897]	Campo Seco	Campo Seco	Campo Úmido	Campo Úmido
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## [1913]	Campo Úmido	Campo Úmido	Campo Seco	Cerrado
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## [2017]	Campo Seco	Cana-de-Açúcar	Campo Seco	Campo Úmido
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## [2129]	Campo Seco	Campo Seco	Cerrado	Campo Seco
## [2133]	Campo Úmido	Campo Úmido	Campo Seco	Campo Seco
## [2137]	Campo Seco	Campo Seco	Campo Seco	Cerrado

## [2141]	Campo Seco	Campo Seco	Campo Úmido	Cerrado
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## [2165]	Campo Seco	Solo Exposto	Cerrado	Mata de Galeria
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## [2193]	Campo Seco	Campo Seco	Solo Exposto	Cerrado
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## [2217]	Campo Seco	Campo Seco	Campo Seco	Cerrado
## [2221]	Solo Exposto	Campo Seco	Cerrado	Campo Seco
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## [2229]	Cerrado	Cerrado	Campo Seco	Campo Seco
## [2233]	Campo Úmido	Solo Exposto	Solo Exposto	Solo Exposto
## [2237]	Cerrado	Cerrado	Campo Seco	Campo Seco
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## [2245]	Solo Exposto	Campo Seco	Campo Úmido	Campo Seco
## [2249]	Solo Exposto	Solo Exposto	Solo Exposto	Campo Seco
## [2253]	Campo Seco	Campo Seco	Solo Exposto	Solo Exposto
## [2257]	Cerrado	Solo Exposto	Solo Exposto	Milho - Safrinha
## [2261]	Campo Úmido	Solo Exposto	Solo Exposto	Campo Seco
## [2265]	Campo Seco	Mata de Galeria	Solo Exposto	Cerrado
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## [2281]	Solo Exposto	Campo Seco	Campo Seco	Campo Seco
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## [2293]	Milho - Safrinha	Campo Seco	Campo Seco	Campo Seco
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## [2313]	Campo Úmido	Campo Seco	Campo Úmido	Campo Úmido
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## [2357]	Campo Seco	Campo Seco	Solo Exposto	Campo Seco
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## [2389]	Campo Úmido	Campo Úmido	Campo Úmido	Campo Seco
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## [2541]	Campo Seco	Campo Seco	Campo Úmido	Campo Úmido
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## [2557]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
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## [2581]	Campo Seco	Campo Seco	Campo Úmido	Campo Úmido
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## [2613]	Campo Seco	Solo Exposto	Campo Seco	Cerrado
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## [2625]	Campo Seco	Campo Seco	Campo Úmido	Cerrado
## [2629]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
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## [2649]	Campo Seco	Campo Seco	Campo Úmido	Cerrado
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## [2657]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
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## [2665]	Campo Úmido	Campo Seco	Campo Seco	Cerrado
## [2669]	Campo Seco	Cerrado	Campo Seco	Cana-de-Açúcar
## [2673]	Cerrado	Campo Seco	Campo Seco	Campo Seco
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## [2681]	Campo Seco	Milho - Safrinha	Cerrado	Cerrado
## [2685]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
## [2689]	Campo Seco	Cana-de-Açúcar	Campo Seco	Campo Seco
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## [2729]	Cerrado	Cana-de-Açúcar	Campo Seco	Campo Seco
## [2733]	Campo Seco	Campo Seco	Cerrado	Cerrado
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## [2741]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [2761]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [2789]	Campo Seco	Campo Seco	Cana-de-Açúcar	Campo Seco
## [2793]	Campo Seco	Campo Seco	Cana-de-Açúcar	Campo Seco
## [2797]	Campo Seco	Mata de Galeria	Campo Úmido	Campo Seco
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## [2809]	Campo Úmido	Campo Seco	Cerrado	Campo Seco
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## [2817]	Campo Seco	Cana-de-Açúcar	Cerrado	Campo Úmido
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## [2825]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [2829]	Campo Seco	Mata de Galeria	Cana-de-Açúcar	Campo Seco
## [2833]	Campo Seco	Cerrado	Campo Seco	Campo Seco
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## [2841]	Cerrado	Campo Seco	Cerrado	Campo Seco
## [2845]	Campo Seco	Cana-de-Açúcar	Campo Seco	Campo Seco
## [2849]	Campo Seco	Cerrado	Campo Seco	Mata de Galeria
## [2853]	Campo Seco	Cerrado	Campo Seco	Campo Seco
## [2857]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [2861]	Campo Úmido	Mata de Galeria	Cana-de-Açúcar	Campo Seco
## [2865]	Mata de Galeria	Cerrado	Campo Seco	Cana-de-Açúcar
## [2869]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [2877]	Campo Seco	Cerrado	Campo Úmido	Campo Seco
## [2881]	Campo Seco	Cana-de-Açúcar	Campo Úmido	Campo Seco
## [2885]	Campo Seco	Campo Seco	Cerrado	Cerrado
## [2889]	Campo Seco	Campo Seco	Campo Seco	Cerrado
## [2893]	Campo Úmido	Mata de Galeria	Cana-de-Açúcar	Solo Exposto
## [2897]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [2901]	Cana-de-Açúcar	Campo Seco	Solo Exposto	Cerrado
## [2905]	Campo Seco	Cana-de-Açúcar	Solo Exposto	Cana-de-Açúcar
## [2909]	Campo Seco	Campo Seco	Campo Úmido	Cerrado
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## [2917]	Campo Seco	Campo Seco	Cerrado	Campo Úmido
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## [2929]	Cerrado	Campo Seco	Cana-de-Açúcar	Cerrado
## [2933]	Campo Seco	Campo Úmido	Cerrado	Campo Úmido
## [2937]	Campo Seco	Solo Exposto	Cana-de-Açúcar	Cana-de-Açúcar
## [2941]	Campo Úmido	Campo Úmido	Cana-de-Açúcar	Campo Seco
## [2945]	Campo Seco	Campo Úmido	Campo Seco	Cana-de-Açúcar
## [2949]	Campo Seco	Campo Seco	Cana-de-Açúcar	Campo Úmido
## [2953]	Milho - Safrinha	Mata de Galeria	Cerrado	Campo Seco
## [2957]	Campo Úmido	Cerrado	Campo Úmido	Solo Exposto
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## [2965]	Campo Seco	Cerrado	Campo Seco	Cerrado
## [2969]	Campo Úmido	Mata de Galeria	Campo Seco	Campo Seco
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## [2993]	Campo Seco	Mata de Galeria	Campo Úmido	Campo Úmido
## [2997]	Milho - Safrinha	Campo Seco	Campo Seco	Campo Seco
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## [3005]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [3017]	Cerrado	Mata de Galeria	Campo Seco	Campo Úmido
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## [3029]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [3033]	Cerrado	Cerrado	Cerrado	Cana-de-Açúcar
## [3037]	Campo Seco	Campo Úmido	Campo Úmido	Campo Seco
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## [3045]	Campo Úmido	Campo Seco	Campo Seco	Cerrado
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## [3053]	Campo Seco	Campo Seco	Campo Úmido	Campo Seco
## [3057]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [3065]	Campo Seco	Campo Úmido	Mata de Galeria	Cerrado
## [3069]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
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## [3093]	Cerrado	Campo Seco	Mata de Galeria	Campo Seco
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## [3129]	Campo Úmido	Campo Seco	Cerrado	Cerrado
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## [3137]	Campo Seco	Cerrado	Campo Seco	Campo Seco
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## [3149]	Campo Seco	Mata de Galeria	Cerrado	Mata de Galeria
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## [3157]	Campo Seco	Campo Úmido	Cana-de-Açúcar	Cerrado
## [3161]	Campo Seco	Campo Úmido	Cerrado	Campo Seco
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## [3169]	Campo Seco	Campo Úmido	Campo Seco	Campo Úmido
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## [3177]	Mata de Galeria	Campo Úmido	Campo Seco	Mata de Galeria
## [3181]	Cana-de-Açúcar	Campo Seco	Campo Seco	Campo Úmido
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## [3189]	Cerrado	Campo Seco	Campo Úmido	Cerrado
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## [3197]	Campo Seco	Campo Seco	Mata de Galeria	Campo Seco
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## [3209]	Campo Seco	Campo Seco	Campo Seco	Mata de Galeria
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## [3217]	Campo Seco	Campo Seco	Campo Seco	Cerrado

## [3221]	Cerrado	Campo Seco	Campo Seco	Cerrado
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## [3229]	Campo Seco	Campo Seco	Cana-de-Açúcar	Cerrado
## [3233]	Cerrado	Mata de Galeria	Cerrado	Cerrado
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## [3241]	Mata de Galeria	Campo Úmido	Mata de Galeria	Cerrado
## [3245]	Campo Seco	Cerrado	Campo Seco	Cerrado
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## [3265]	Cerrado	Cerrado	Campo Úmido	Campo Seco
## [3269]	Campo Úmido	Cerrado	Cana-de-Açúcar	Cana-de-Açúcar
## [3273]	Campo Seco	Campo Seco	Cerrado	Mata de Galeria
## [3277]	Cerrado	Campo Seco	Cerrado	Campo Seco
## [3281]	Campo Úmido	Campo Seco	Campo Úmido	Cerrado
## [3285]	Cerrado	Cerrado	Cerrado	Campo Úmido
## [3289]	Cerrado	Milho - Safrinha	Solo Exposto	Cerrado
## [3293]	Campo Seco	Cerrado	Mata de Galeria	Milho - Safrinha
## [3297]	Campo Seco	Campo Úmido	Cana-de-Açúcar	Solo Exposto
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## [3321]	Solo Exposto	Solo Exposto	Cerrado	Solo Exposto
## [3325]	Campo Úmido	Solo Exposto	Campo Úmido	Mata de Galeria
## [3329]	Solo Exposto	Cerrado	Solo Exposto	Cerrado
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## [3337]	Campo Seco	Cerrado	Campo Seco	Solo Exposto
## [3341]	Solo Exposto	Campo Seco	Campo Seco	Solo Exposto
## [3345]	Cerrado	Campo Seco	Solo Exposto	Campo Seco
## [3349]	Solo Exposto	Solo Exposto	Solo Exposto	Campo Seco
## [3353]	Campo Seco	Solo Exposto	Cerrado	Solo Exposto
## [3357]	Solo Exposto	Cerrado	Solo Exposto	Solo Exposto
## [3361]	Campo Seco	Solo Exposto	Solo Exposto	Solo Exposto
## [3365]	Campo Seco	Campo Seco	Solo Exposto	Cerrado
## [3369]	Solo Exposto	Milho - Safrinha	Solo Exposto	Solo Exposto
## [3373]	Solo Exposto	Cerrado	Milho - Safrinha	Campo Seco
## [3377]	Cerrado	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [3381]	Solo Exposto	Cana-de-Açúcar	Milho - Safrinha	Campo Seco
## [3385]	Solo Exposto	Solo Exposto	Campo Seco	Solo Exposto
## [3389]	Solo Exposto	Solo Exposto	Solo Exposto	Campo Seco
## [3393]	Milho - Safrinha	Campo Seco	Campo Seco	Solo Exposto
## [3397]	Cana-de-Açúcar	Solo Exposto	Campo Úmido	Cerrado
## [3401]	Campo Seco	Campo Úmido	Cana-de-Açúcar	Mata de Galeria
## [3405]	Solo Exposto	Solo Exposto	Cerrado	Mata de Galeria
## [3409]	Campo Seco	Solo Exposto	Mata de Galeria	Campo Úmido
## [3413]	Solo Exposto	Campo Seco	Campo Seco	Cana-de-Açúcar
## [3417]	Campo Úmido	Cana-de-Açúcar	Solo Exposto	Campo Seco
## [3421]	Cerrado	Mata de Galeria	Solo Exposto	Solo Exposto
## [3425]	Cerrado	Solo Exposto	Campo Úmido	Solo Exposto
## [3429]	Milho - Safrinha	Solo Exposto	Solo Exposto	Solo Exposto
## [3433]	Solo Exposto	Solo Exposto	Solo Exposto	Milho - Safrinha

##	[3437]	Milho - Safrinha	Solo Exposto	Solo Exposto	Milho - Safrinha
##	[3441]	Mata de Galeria	Solo Exposto	Solo Exposto	Solo Exposto
##	[3445]	Solo Exposto	Milho - Safrinha	Milho - Safrinha	Solo Exposto
##	[3449]	Solo Exposto	Solo Exposto	Milho - Safrinha	Milho - Safrinha
##	[3453]	Solo Exposto	Milho - Safrinha	Campo Úmido	Milho - Safrinha
##	[3457]	Solo Exposto	Milho - Safrinha	Solo Exposto	Solo Exposto
##	[3461]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
##	[3465]	Milho - Safrinha	Milho - Safrinha	Solo Exposto	Milho - Safrinha
##	[3469]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha	Cerrado
##	[3473]	Milho - Safrinha	Solo Exposto	Solo Exposto	Solo Exposto
##	[3477]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha	Solo Exposto
##	[3481]	Mata de Galeria	Cerrado	Milho - Safrinha	Solo Exposto
##	[3485]	Milho - Safrinha	Cerrado	Solo Exposto	Solo Exposto
##	[3489]	Cerrado	Milho - Safrinha	Solo Exposto	Solo Exposto
##	[3493]	Solo Exposto	Campo Úmido	Mata de Galeria	Solo Exposto
##	[3497]	Milho - Safrinha	Solo Exposto	Milho - Safrinha	Campo Seco
##	[3501]	Solo Exposto	Solo Exposto	Cerrado	Cerrado
##	[3505]	Mata de Galeria	Campo Seco	Mata de Galeria	Solo Exposto
##	[3509]	Campo Seco	Campo Úmido	Campo Seco	Campo Seco
##	[3513]	Campo Seco	Campo Seco	Milho - Safrinha	Campo Seco
##	[3517]	Cerrado	Mata de Galeria	Solo Exposto	Solo Exposto
##	[3521]	Cerrado	Solo Exposto	Campo Úmido	Cerrado
##	[3525]	Milho - Safrinha	Campo Seco	Campo Úmido	Milho - Safrinha
##	[3529]	Campo Úmido	Cerrado	Solo Exposto	Milho - Safrinha
##	[3533]	Campo Seco	Campo Seco	Solo Exposto	Campo Seco
##	[3537]	Campo Úmido	Milho - Safrinha	Mata de Galeria	Campo Seco
##	[3541]	Campo Seco	Cerrado	Campo Seco	Cerrado
##	[3545]	Milho - Safrinha	Milho - Safrinha	Campo Seco	Mata de Galeria
##	[3549]	Campo Seco	Cerrado	Mata de Galeria	Campo Úmido
##	[3553]	Cerrado	Solo Exposto	Mata de Galeria	Campo Seco
##	[3557]	Campo Seco	Campo Seco	Cerrado	Campo Seco
##	[3561]	Campo Seco	Campo Úmido	Campo Seco	Campo Úmido
##	[3565]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
##	[3569]	Cerrado	Campo Úmido	Campo Seco	Campo Seco
##	[3573]	Campo Seco	Campo Seco	Milho - Safrinha	Cerrado
##	[3577]	Campo Seco	Campo Úmido	Campo Úmido	Campo Úmido
##	[3581]	Campo Úmido	Campo Seco	Campo Seco	Campo Úmido
##	[3585]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
##	[3589]	Campo Seco	Campo Seco	Campo Seco	Mata de Galeria
##	[3593]	Campo Seco	Cerrado	Campo Seco	Campo Seco
##	[3597]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
##	[3601]	Mata de Galeria	Campo Seco	Campo Seco	Campo Seco
##	[3605]	Campo Úmido	Campo Seco	Campo Seco	Cerrado
##	[3609]	Campo Seco	Campo Seco	Cerrado	Campo Seco
##	[3613]	Campo Seco	Cerrado	Cerrado	Cerrado
##	[3617]	Milho - Safrinha	Campo Úmido	Campo Seco	Campo Seco
##	[3621]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
##	[3625]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
##	[3629]	Campo Seco	Campo Seco	Cerrado	Campo Seco
##	[3633]	Cerrado	Campo Seco	Campo Seco	Campo Úmido
##	[3637]	Campo Úmido	Solo Exposto	Solo Exposto	Solo Exposto
##	[3641]	Solo Exposto	Milho - Safrinha	Campo Úmido	Campo Úmido
##	[3645]	Cana-de-Açúcar	Milho - Safrinha	Milho - Safrinha	Cana-de-Açúcar
##	[3649]	Campo Seco	Campo Úmido	Milho - Safrinha	Milho - Safrinha

```

## [3653] Milho - Safrinha Milho - Safrinha Campo Úmido Campo Úmido
## [3657] Campo Úmido Campo Úmido Campo Úmido Cana-de-Açúcar
## [3661] Solo Exposto Solo Exposto Mata de Galeria Mata de Galeria
## [3665] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3669] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3673] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3677] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3681] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3685] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3689] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3693] Mata de Galeria Mata de Galeria Mata de Galeria Mata de Galeria
## [3697] Cerrado Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3701] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3705] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3709] Solo Exposto Cana-de-Açúcar Solo Exposto Solo Exposto
## [3713] Solo Exposto Solo Exposto Solo Exposto Campo Seco
## [3717] Milho - Safrinha Milho - Safrinha Solo Exposto Milho - Safrinha
## [3721] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3725] Milho - Safrinha Solo Exposto Solo Exposto Solo Exposto
## [3729] Solo Exposto Milho - Safrinha Solo Exposto Milho - Safrinha
## [3733] Solo Exposto Solo Exposto Milho - Safrinha Campo Seco
## [3737] Solo Exposto Cana-de-Açúcar Cana-de-Açúcar Campo Seco
## [3741] Cana-de-Açúcar Cana-de-Açúcar Milho - Safrinha Cana-de-Açúcar
## [3745] Milho - Safrinha Milho - Safrinha Solo Exposto Solo Exposto
## [3749] Solo Exposto Solo Exposto Cana-de-Açúcar Cana-de-Açúcar
## [3753] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3757] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3761] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3765] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3769] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3773] Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar Cana-de-Açúcar
## [3777] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3781] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3785] Cerrado Cerrado Mata de Galeria Cerrado
## [3789] Cerrado Cerrado Cerrado Cerrado
## [3793] Cerrado Cerrado Cerrado Cerrado
## [3797] Cerrado Mata de Galeria Milho - Safrinha Milho - Safrinha
## [3801] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3805] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3809] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3813] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3817] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3821] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3825] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [3829] Milho - Safrinha Milho - Safrinha Milho - Safrinha Cana-de-Açúcar
## [3833] Milho - Safrinha
## 7 Levels: Campo Seco Campo Úmido Cana-de-Açúcar ... Solo Exposto
length(levels(map.alto.formoso$uso_terra))

## [1] 7
length(levels(map.alto.formoso$classe))

## [1] 8

```

```
map.alto.formoso$data.colheita[!is.na(map.alto.formoso$data.colheita)]
```

```
## [1] "2019-04-21" "2019-07-04" "2019-05-01" "2019-03-11" "2019-04-09"
## [6] "2019-04-24" "2019-04-27" "2019-04-04" "2019-04-04" "2019-04-04"
## [11] "2019-04-04" "2019-04-21" "2019-04-21" "2019-04-30" "2019-05-03"
## [16] "2019-04-30" "2019-05-11" "2019-05-11" "2019-05-09" "2019-05-11"
## [21] "2019-05-10" "2019-05-10" "2019-05-10" "2019-05-14" "2019-05-14"
## [26] "2019-05-19" "2019-05-19" "2019-06-13" "2019-06-18" "2019-06-18"
## [31] "2019-06-25" "2019-06-28" "2019-06-28" "2019-06-30" "2019-07-10"
## [36] "2019-06-30" "2019-06-30" "2019-06-22" "2019-06-25" "2019-06-20"
## [41] "2019-06-20" "2019-06-28" "2019-06-26" "2019-06-29" "2019-06-29"
## [46] "2019-07-04" "2019-07-04" "2019-07-04" "2019-07-04" "2019-07-04"
## [51] "2019-07-07" "2019-07-08" "2019-07-14" "2019-07-14" "2019-07-14"
## [56] "2019-07-14" "2019-07-14" "2019-07-11"
```

```
map.alto.formoso$julian[!is.na(map.alto.formoso$julian)]
```

```
## [1] 18007 18081 18017 17966 17995 18010 18013 17990 17990 17990 17990
## [12] 18007 18007 18016 18019 18016 18027 18027 18025 18027 18026 18026
## [23] 18026 18030 18030 18035 18035 18060 18065 18065 18072 18075 18075
## [34] 18077 18087 18077 18077 18069 18072 18067 18067 18075 18073 18076
## [45] 18076 18081 18081 18081 18081 18081 18084 18085 18091 18091 18091
## [56] 18091 18091 18088
```

```
str(map.alto.formoso)
```

```
## Classes 'sf' and 'data.frame': 3833 obs. of 7 variables:
## $ uso_terra : Factor w/ 7 levels "Campo Seco","Campo Úmido",...: 4 4 1 1 4 4 4 2 5 4 ...
## $ data.colheita: Date, format: NA NA ...
## $ julian : num NA NA NA NA NA NA NA NA NA NA ...
## ..- attr(*, "origin")= Date, format: "1970-01-01"
## $ name : chr "Alto Formoso" "Alto Formoso" "Alto Formoso" "Alto Formoso" ...
## $ classe : Factor w/ 8 levels "Campo Seco","Campo Úmido",...: 4 4 1 1 4 4 4 2 5 4 ...
## $ classe.num : num 4 4 1 1 4 4 4 2 5 4 ...
## $ geometry :sfc_MULTIPOLYGON of length 3833; first list element: List of 1
## ..$ :List of 1
## .. ..$ : num [1:5, 1:2] 314900 314910 314910 314900 314900 ...
## ..- attr(*, "class")= chr "XY" "MULTIPOLYGON" "sfg"
## - attr(*, "sf_column")= chr "geometry"
## - attr(*, "agr")= Factor w/ 3 levels "constant","aggregate",...: NA NA NA NA NA NA
## ..- attr(*, "names")= chr "uso_terra" "data.colheita" "julian" "name" ...
```

```
# olhos leste
```

```
map.olhos.leste <- sf::st_read(dsn = 'maps/Olhos_Leste', layer = 'Olhos_leste') %>%
  dplyr::rename(uso_terra = CLASS_C_19) %>%
  dplyr::mutate(data.colheita = lubridate::ymd(DATA_COLHE) + days(1),
    julian = julian(data.colheita),
    name = 'Olhos Leste',
    classe = factor(uso_terra, levels = lu.classes),
    classe.num = factor(classe, levels = lu.classes, labels = 1:length(lu.classes)) %>% as.numeric())
```

```
## Reading layer `Olhos_leste' from data source `C:\Users\bebs0001\Documents\Movimento_Queixadas_PNEmas'
## Simple feature collection with 539 features and 2 fields
## geometry type: MULTIPOLYGON
## dimension: XY
## bbox: xmin: 296041 ymin: 7970033 xmax: 302982.2 ymax: 7981820
```

```
## epsg (SRID):      NA
## proj4string:      +proj=utm +zone=22 +south +ellps=GRS80 +units=m +no_defs
```

```
# Check
```

```
map.olhos.leste$uso_terra
```

```
## [1] Campo Úmido      Campo Seco      Campo Seco      Campo Seco
## [5] Campo Seco      Campo Seco      Campo Úmido      Campo Úmido
## [9] Campo Úmido      Mata de Galeria Mata de Galeria Campo Seco
## [13] Mata de Galeria Campo Seco      Campo Seco      Campo Seco
## [17] Campo Úmido      Campo Seco      Campo Seco      Campo Úmido
## [21] Campo Seco      Campo Seco      Mata de Galeria Campo Úmido
## [25] Campo Seco      Mata de Galeria Campo Seco      Cerrado
## [29] Campo Úmido      Campo Seco      Cerrado         Mata de Galeria
## [33] Campo Seco      Cerrado         Mata de Galeria Campo Úmido
## [37] Campo Úmido      Campo Úmido      Campo Seco      Campo Seco
## [41] Campo Úmido      Campo Seco      Campo Seco      Mata de Galeria
## [45] Campo Seco      Campo Seco      Campo Seco      Campo Seco
## [49] Campo Seco      Campo Seco      Campo Úmido      Campo Seco
## [53] Campo Seco      Campo Seco      Campo Seco      Campo Úmido
## [57] Campo Seco      Campo Seco      Campo Seco      Campo Seco
## [61] Campo Úmido      Campo Seco      Campo Seco      Campo Úmido
## [65] Mata de Galeria Campo Úmido      Campo Úmido      Campo Seco
## [69] Campo Úmido      Campo Úmido      Campo Seco      Campo Seco
## [73] Campo Seco      Campo Seco      Campo Seco      Campo Úmido
## [77] Mata de Galeria Campo Seco      Campo Seco      Campo Seco
## [81] Campo Seco      Campo Úmido      Campo Úmido      Campo Seco
## [85] Campo Seco      Cerrado         Campo Seco      Campo Seco
## [89] Campo Úmido      Campo Seco      Campo Seco      Campo Úmido
## [93] Campo Seco      Campo Seco      Campo Úmido      Campo Úmido
## [97] Campo Úmido      Campo Seco      Campo Seco      Campo Úmido
## [101] Campo Seco      Campo Seco      Campo Úmido      Campo Seco
## [105] Campo Úmido      Campo Seco      Campo Seco      Mata de Galeria
## [109] Campo Seco      Mata de Galeria Campo Seco      Mata de Galeria
## [113] Campo Seco      Campo Úmido      Campo Seco      Campo Seco
## [117] Campo Úmido      Campo Seco      Campo Úmido      Campo Seco
## [121] Campo Seco      Campo Seco      Campo Úmido      Campo Seco
## [125] Campo Úmido      Campo Seco      Mata de Galeria Campo Seco
## [129] Campo Úmido      Campo Seco      Campo Úmido      Milho - Safrinha
## [133] Mata de Galeria Campo Seco      Campo Úmido      Campo Úmido
## [137] Mata de Galeria Campo Seco      Campo Úmido      Mata de Galeria
## [141] Campo Seco      Mata de Galeria Campo Úmido      Cerrado
## [145] Mata de Galeria Campo Seco      Campo Úmido      Mata de Galeria
## [149] Campo Seco      Mata de Galeria Campo Seco      Campo Seco
## [153] Cerrado         Campo Seco      Campo Seco      Cerrado
## [157] Mata de Galeria Campo Úmido      Mata de Galeria Campo Seco
## [161] Campo Seco      Campo Úmido      Campo Seco      Mata de Galeria
## [165] Campo Seco      Campo Úmido      Campo Úmido      Campo Seco
## [169] Campo Seco      Campo Seco      Campo Seco      Campo Seco
## [173] Campo Seco      Campo Úmido      Campo Seco      Campo Seco
## [177] Campo Seco      Campo Seco      Campo Seco      Campo Úmido
## [181] Campo Seco      Mata de Galeria Campo Seco      Campo Seco
## [185] Campo Seco      Campo Seco      Campo Seco      Mata de Galeria
## [189] Campo Seco      Campo Seco      Mata de Galeria Campo Seco
## [193] Campo Seco      Campo Seco      Campo Seco      Campo Seco
```

## [197]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [201]	Campo Úmido	Campo Seco	Campo Seco	Campo Seco
## [205]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [209]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [213]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [217]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [221]	Campo Seco	Cerrado	Campo Seco	Campo Seco
## [225]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [229]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [233]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [237]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [241]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [245]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [249]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [253]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [257]	Milho - Safrinha	Campo Seco	Campo Seco	Campo Seco
## [261]	Milho - Safrinha	Campo Seco	Milho - Safrinha	Cerrado
## [265]	Cerrado	Cerrado	Campo Seco	Milho - Safrinha
## [269]	Cerrado	Campo Seco	Milho - Safrinha	Campo Seco
## [273]	Campo Seco	Milho - Safrinha	Cerrado	Cerrado
## [277]	Campo Seco	Cerrado	Campo Seco	Cerrado
## [281]	Mata de Galeria	Milho - Safrinha	Mata de Galeria	Milho - Safrinha
## [285]	Cerrado	Milho - Safrinha	Milho - Safrinha	Campo Seco
## [289]	Cerrado	Milho - Safrinha	Cerrado	Campo Seco
## [293]	Campo Seco	Cerrado	Campo Úmido	Cerrado
## [297]	Campo Seco	Campo Seco	Milho - Safrinha	Cerrado
## [301]	Campo Seco	Campo Seco	Campo Seco	Campo Seco
## [305]	Cerrado	Campo Seco	Milho - Safrinha	Campo Seco
## [309]	Campo Seco	Cerrado	Mata de Galeria	Campo Seco
## [313]	Cerrado	Cerrado	Campo Úmido	Cerrado
## [317]	Milho - Safrinha	Mata de Galeria	Cerrado	Milho - Safrinha
## [321]	Cerrado	Cerrado	Cerrado	Cerrado
## [325]	Cerrado	Campo Seco	Campo Úmido	Mata de Galeria
## [329]	Cerrado	Campo Úmido	Mata de Galeria	Cerrado
## [333]	Campo Úmido	Campo Seco	Milho - Safrinha	Campo Seco
## [337]	Cerrado	Campo Úmido	Cerrado	Milho - Safrinha
## [341]	Campo Úmido	Campo Seco	Campo Seco	Mata de Galeria
## [345]	Cerrado	Campo Seco	Campo Seco	Campo Seco
## [349]	Mata de Galeria	Cerrado	Milho - Safrinha	Milho - Safrinha
## [353]	Cerrado	Mata de Galeria	Cerrado	Mata de Galeria
## [357]	Campo Úmido	Campo Seco	Mata de Galeria	Mata de Galeria
## [361]	Campo Seco	Campo Seco	Campo Seco	Campo Úmido
## [365]	Mata de Galeria	Mata de Galeria	Cerrado	Campo Seco
## [369]	Campo Seco	Campo Seco	Mata de Galeria	Mata de Galeria
## [373]	Mata de Galeria	Cerrado	Mata de Galeria	Campo Seco
## [377]	Campo Seco	Campo Seco	Campo Seco	Cerrado
## [381]	Mata de Galeria	Cerrado	Campo Seco	Campo Seco
## [385]	Campo Úmido	Mata de Galeria	Campo Seco	Campo Seco
## [389]	Campo Úmido	Campo Seco	Cerrado	Campo Úmido
## [393]	Mata de Galeria	Campo Seco	Cerrado	Mata de Galeria
## [397]	Campo Úmido	Campo Seco	Cerrado	Campo Úmido
## [401]	Cerrado	Campo Seco	Campo Seco	Mata de Galeria
## [405]	Campo Seco	Campo Úmido	Campo Úmido	Campo Seco
## [409]	Cerrado	Campo Seco	Campo Seco	Mata de Galeria

```

## [413] Campo Seco      Cerrado      Mata de Galeria Cerrado
## [417] Cerrado          Cerrado      Cerrado          Cerrado
## [421] Campo Seco      Cerrado      Cerrado          Cerrado
## [425] Campo Seco      Mata de Galeria Cerrado          Cerrado
## [429] Campo Seco      Cerrado      Cerrado          Cana-de-Açúcar
## [433] Mata de Galeria Cana-de-Açúcar Campo Seco        Campo Seco
## [437] Cana-de-Açúcar  Campo Seco    Cerrado          Mata de Galeria
## [441] Cerrado          Campo Seco    Cerrado          Cerrado
## [445] Campo Seco      Campo Seco    Mata de Galeria  Cana-de-Açúcar
## [449] Campo Seco      Campo Úmido   Mata de Galeria  Cerrado
## [453] Campo Seco      Cerrado       Campo Seco       Campo Seco
## [457] Campo Seco      Campo Úmido   Mata de Galeria  Campo Seco
## [461] Campo Seco      Campo Úmido   Mata de Galeria  Campo Úmido
## [465] Campo Úmido     Mata de Galeria Campo Seco        Campo Úmido
## [469] Campo Úmido     Campo Seco    Campo Úmido      Campo Seco
## [473] Campo Seco      Cerrado       Campo Seco       Cerrado
## [477] Campo Seco      Campo Seco    Cerrado          Campo Seco
## [481] Cana-de-Açúcar  Campo Seco    Campo Úmido      Campo Úmido
## [485] Campo Úmido     Campo Úmido   Campo Seco        Campo Úmido
## [489] Cerrado          Cerrado       Cerrado          Milho - Safrinha
## [493] Campo Seco      Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [497] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [501] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [505] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [509] Milho - Safrinha Campo Seco      Campo Seco        Cerrado
## [513] Campo Seco      Campo Seco    Mata de Galeria  Milho - Safrinha
## [517] Milho - Safrinha Milho - Safrinha Cerrado          Cerrado
## [521] Cerrado          Cerrado       Campo Seco        Campo Seco
## [525] Campo Seco      Cerrado       Milho - Safrinha Milho - Safrinha
## [529] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [533] Milho - Safrinha Milho - Safrinha Milho - Safrinha Milho - Safrinha
## [537] Milho - Safrinha Milho - Safrinha Milho - Safrinha
## 6 Levels: Campo Seco Campo Úmido Cana-de-Açúcar ... Milho - Safrinha

length(levels(map.olhos.leste$uso_terra))

## [1] 6

length(levels(map.olhos.leste$classe))

## [1] 8

map.olhos.leste$data.colheita[!is.na(map.olhos.leste$data.colheita)]

## [1] "2019-08-05" "2019-08-05" "2019-08-05" "2019-07-31" "2019-08-05"
## [6] "2019-07-20" "2019-08-05"

str(map.olhos.leste)

## Classes 'sf' and 'data.frame': 539 obs. of 8 variables:
## $ uso_terra : Factor w/ 6 levels "Campo Seco","Campo Úmido",...: 2 1 1 1 1 1 2 2 2 5 ...
## $ DATA_COLHE : Date, format: NA NA ...
## $ geometry :sfc_MULTIPOLYGON of length 539; first list element: List of 1
## ..$ :List of 1
## .. ..$ : num [1:5, 1:2] 298293 298283 298283 298293 298293 ...
## ..- attr(*, "class")= chr "XY" "MULTIPOLYGON" "sfg"
## $ data.colheita: Date, format: NA NA ...

```

```
## $ julian      : num  NA NA NA NA NA NA NA NA NA NA ...
##   ..- attr(*, "origin")= Date, format: "1970-01-01"
## $ name        : chr  "Olhos Leste" "Olhos Leste" "Olhos Leste" "Olhos Leste" ...
## $ classe      : Factor w/ 8 levels "Campo Seco","Campo Úmido",...: 2 1 1 1 1 1 2 2 2 5 ...
## $ classe.num   : num  2 1 1 1 1 1 2 2 2 5 ...
## - attr(*, "sf_column")= chr "geometry"
## - attr(*, "agr")= Factor w/ 3 levels "constant","aggregate",...: NA NA NA NA NA NA NA NA
##   ..- attr(*, "names")= chr  "uso_terra" "DATA_COLHE" "data.colheita" "julian" ...
```

```
# olhos oeste
```

```
map.olhos.oeste <- sf::st_read(dsn = 'maps/Olhos_Oeste', layer = 'olhos_oeste') %>%
```

```
  dplyr::rename(uso_terra = CLASS_B_19) %>%
```

```
  dplyr::mutate(data.colheita = lubridate::ymd(NA) + days(1),
```

```
    julian = julian(data.colheita),
```

```
    name = 'Olhos Oeste',
```

```
    classe = factor(uso_terra, levels = lu.classes),
```

```
    classe.num = factor(classe, levels = lu.classes, labels = 1:length(lu.classes)) %>% as.numeric()
```

```
## Reading layer `olhos_oeste' from data source `C:\Users\bebs0001\Documents\Movimento_Queixadas_PNEmas'
```

```
## Simple feature collection with 778 features and 1 field
```

```
## geometry type:  MULTIPOLYGON
```

```
## dimension:      XY
```

```
## bbox:           xmin: 286705.4 ymin: 7970904 xmax: 296580.6 ymax: 7980844
```

```
## epsg (SRID):    NA
```

```
## proj4string:     +proj=utm +zone=22 +south +ellps=GRS80 +units=m +no_defs
```

```
# Check
```

```
map.olhos.oeste$uso_terra
```

```
## [1] Campo Seco          Campo Seco          Cerrado
## [4] Campo Seco          Campo Seco          Campo Seco
## [7] Campo Seco          Campo Seco          Campo Seco
## [10] Campo Seco          Mata de Galeria     Campo Seco
## [13] Campo Úmido         Campo Seco          Campo Seco
## [16] Campo Seco          Campo Seco          Cerrado
## [19] Campo Úmido         Campo Úmido         Campo Seco
## [22] Campo Seco          Campo Seco          Campo Seco
## [25] Campo Seco          Campo Seco          Campo Seco
## [28] Campo Seco          Campo Seco          Campo Seco
## [31] Campo Úmido         Campo Úmido         Campo Seco
## [34] Campo Seco          Campo Seco          Campo Úmido
## [37] Campo Seco          Campo Úmido         Cerrado
## [40] Cerrado             Campo Úmido         Campo Úmido
## [43] Campo Seco          Campo Seco          Campo Seco
## [46] Campo Seco          Cerrado             Campo Seco
## [49] Campo Úmido         Campo Seco          Campo Seco
## [52] Campo Seco          Campo Seco          Campo Seco
## [55] Campo Úmido         Campo Seco          Campo Seco
## [58] Mata de Galeria     Campo Seco          Campo Úmido
## [61] Campo Úmido         Campo Seco          Campo Úmido
## [64] Campo Seco          Campo Seco          Campo Seco
## [67] Campo Úmido         Campo Úmido         Campo Úmido
## [70] Campo Úmido         Campo Seco          Campo Úmido
## [73] Campo Seco          Campo Seco          Campo Seco
## [76] Campo Seco          Campo Úmido         Campo Seco
## [79] Campo Seco          Campo Úmido         Campo Úmido
```


## [82]	Campo Seco	Mata de Galeria	Campo Seco
## [85]	Campo Seco	Campo Seco	Campo Seco
## [88]	Campo Seco	Campo Seco	Campo Seco
## [91]	Campo Seco	Campo Seco	Campo Úmido
## [94]	Campo Seco	Campo Úmido	Campo Seco
## [97]	Campo Seco	Campo Seco	Campo Seco
## [100]	Campo Seco	Campo Seco	Cerrado
## [103]	Campo Seco	Campo Seco	Campo Seco
## [106]	Campo Úmido	Campo Seco	Campo Seco
## [109]	Campo Seco	Campo Seco	Campo Seco
## [112]	Campo Seco	Campo Seco	Campo Seco
## [115]	Campo Úmido	Campo Seco	Cerrado
## [118]	Campo Seco	Campo Seco	Campo Seco
## [121]	Cerrado	Campo Seco	Campo Seco
## [124]	Campo Seco	Campo Seco	Cerrado
## [127]	Campo Seco	Mata de Galeria	Campo Seco
## [130]	Campo Seco	Campo Seco	Campo Seco
## [133]	Cerrado	Campo Seco	Campo Seco
## [136]	Campo Seco	Campo Seco	Campo Úmido
## [139]	Campo Seco	Campo Seco	Campo Seco
## [142]	Campo Seco	Campo Seco	Campo Úmido
## [145]	Campo Seco	Campo Úmido	Campo Seco
## [148]	Campo Seco	Campo Seco	Campo Seco
## [151]	Campo Seco	Campo Seco	Campo Seco
## [154]	Campo Seco	Campo Seco	Campo Seco
## [157]	Campo Seco	Mata de Galeria	Campo Seco
## [160]	Campo Seco	Campo Seco	Campo Seco
## [163]	Campo Seco	Campo Seco	Campo Seco
## [166]	Campo Úmido	Campo Seco	Campo Seco
## [169]	Campo Seco	Campo Seco	Campo Seco
## [172]	Campo Úmido	Campo Úmido	Campo Seco
## [175]	Campo Seco	Campo Seco	Campo Seco
## [178]	Campo Seco	Campo Seco	Campo Seco
## [181]	Campo Seco	Campo Seco	Cerrado
## [184]	Campo Seco	Campo Seco	Campo Úmido
## [187]	Campo Seco	Campo Seco	Campo Úmido
## [190]	Mata de Galeria	Campo Úmido	Campo Seco
## [193]	Campo Úmido	Campo Seco	Campo Seco
## [196]	Campo Seco	Campo Seco	Campo Seco
## [199]	Campo Seco	Campo Úmido	Campo Seco
## [202]	Campo Seco	Campo Seco	Campo Seco
## [205]	Campo Seco	Campo Seco	Campo Seco
## [208]	Campo Seco	Campo Seco	Campo Seco
## [211]	Campo Seco	Campo Seco	Campo Seco
## [214]	Campo Seco	Campo Seco	Campo Seco
## [217]	Campo Seco	Campo Seco	Campo Seco
## [220]	Campo Seco	Cerrado	Campo Seco
## [223]	Campo Seco	Campo Úmido	Campo Seco
## [226]	Cerrado	Campo Seco	Campo Úmido
## [229]	Cerrado	Cerrado	Campo Seco
## [232]	Campo Seco	Campo Seco	Campo Seco
## [235]	Campo Seco	Campo Úmido	Campo Seco
## [238]	Campo Seco	Campo Seco	Campo Seco
## [241]	Campo Seco	Campo Seco	Campo Seco

## [244]	Campo Seco	Campo Seco	Campo Seco
## [247]	Campo Seco	Campo Seco	Campo Seco
## [250]	Campo Seco	Campo Seco	Campo Seco
## [253]	Campo Seco	Campo Seco	Campo Seco
## [256]	Campo Seco	Campo Seco	Campo Seco
## [259]	Campo Seco	Campo Seco	Campo Seco
## [262]	Campo Seco	Campo Seco	Campo Seco
## [265]	Campo Seco	Campo Seco	Campo Seco
## [268]	Campo Seco	Campo Seco	Campo Seco
## [271]	Campo Seco	Campo Seco	Campo Seco
## [274]	Campo Seco	Campo Seco	Campo Seco
## [277]	Campo Seco	Campo Seco	Campo Seco
## [280]	Campo Seco	Campo Seco	Campo Seco
## [283]	Campo Seco	Campo Seco	Campo Seco
## [286]	Campo Seco	Campo Seco	Campo Seco
## [289]	Campo Seco	Campo Seco	Campo Seco
## [292]	Campo Seco	Campo Seco	Campo Seco
## [295]	Campo Seco	Campo Seco	Campo Seco
## [298]	Campo Seco	Campo Seco	Campo Seco
## [301]	Campo Seco	Campo Seco	Campo Seco
## [304]	Campo Seco	Campo Seco	Campo Seco
## [307]	Campo Seco	Campo Seco	Campo Seco
## [310]	Campo Seco	Campo Seco	Campo Seco
## [313]	Campo Seco	Campo Seco	Campo Seco
## [316]	Campo Seco	Campo Seco	Campo Seco
## [319]	Campo Seco	Campo Seco	Campo Seco
## [322]	Campo Seco	Campo Seco	Campo Seco
## [325]	Campo Seco	Campo Seco	Campo Seco
## [328]	Campo Seco	Campo Seco	Campo Seco
## [331]	Cerrado	Campo Seco	Campo Seco
## [334]	Campo Seco	Campo Seco	Campo Seco
## [337]	Campo Seco	Campo Seco	Campo Úmido
## [340]	Campo Seco	Campo Úmido	Cerrado
## [343]	Campo Seco	Campo Seco	Campo Seco
## [346]	Campo Seco	Campo Seco	Campo Seco
## [349]	Campo Seco	Campo Seco	Campo Seco
## [352]	Campo Seco	Campo Seco	Campo Seco
## [355]	Cerrado	Campo Seco	Campo Seco
## [358]	Campo Seco	Campo Seco	Campo Seco
## [361]	Milho - Safrinha	Não Disponível - Vala	Campo Seco
## [364]	Campo Seco	Campo Seco	Mata de Galeria
## [367]	Campo Seco	Campo Seco	Campo Seco
## [370]	Não Disponível - Vala	Campo Seco	Campo Seco
## [373]	Não Disponível - Vala	Campo Seco	Campo Seco
## [376]	Campo Seco	Campo Seco	Campo Seco
## [379]	Campo Seco	Campo Seco	Campo Seco
## [382]	Campo Seco	Campo Seco	Campo Seco
## [385]	Campo Seco	Campo Seco	Campo Seco
## [388]	Campo Seco	Campo Seco	Campo Seco
## [391]	Campo Seco	Campo Seco	Campo Seco
## [394]	Campo Seco	Campo Seco	Campo Seco
## [397]	Campo Seco	Campo Seco	Campo Seco
## [400]	Campo Seco	Campo Seco	Campo Seco
## [403]	Campo Seco	Campo Seco	Campo Seco

## [406]	Milho - Safrinha	Campo Seco	Milho - Safrinha
## [409]	Campo Seco	Campo Seco	Campo Seco
## [412]	Campo Seco	Campo Seco	Campo Seco
## [415]	Campo Seco	Campo Seco	Campo Seco
## [418]	Campo Seco	Campo Seco	Campo Seco
## [421]	Milho - Safrinha	Campo Seco	Campo Seco
## [424]	Cana-de-Açúcar	Campo Seco	Campo Seco
## [427]	Campo Seco	Campo Seco	Campo Seco
## [430]	Campo Seco	Não Disponível - Vala	Campo Seco
## [433]	Campo Seco	Campo Seco	Campo Seco
## [436]	Campo Seco	Campo Seco	Campo Seco
## [439]	Campo Seco	Campo Seco	Milho - Safrinha
## [442]	Campo Seco	Campo Seco	Milho - Safrinha
## [445]	Milho - Safrinha	Campo Seco	Milho - Safrinha
## [448]	Milho - Safrinha	Campo Seco	Milho - Safrinha
## [451]	Cana-de-Açúcar	Milho - Safrinha	Milho - Safrinha
## [454]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [457]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [460]	Mata de Galeria	Milho - Safrinha	Milho - Safrinha
## [463]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [466]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [469]	Milho - Safrinha	Cerrado	Milho - Safrinha
## [472]	Campo Seco	Campo Seco	Campo Seco
## [475]	Milho - Safrinha	Campo Seco	Campo Seco
## [478]	Campo Seco	Milho - Safrinha	Milho - Safrinha
## [481]	Não Disponível - Vala	Campo Seco	Cana-de-Açúcar
## [484]	Cerrado	Milho - Safrinha	Campo Úmido
## [487]	Mata de Galeria	Campo Seco	Milho - Safrinha
## [490]	Cerrado	Cerrado	Cerrado
## [493]	Campo Seco	Campo Seco	Campo Seco
## [496]	Campo Úmido	Campo Seco	Campo Seco
## [499]	Campo Seco	Milho - Safrinha	Cerrado
## [502]	Campo Seco	Campo Seco	Campo Seco
## [505]	Campo Seco	Campo Seco	Cerrado
## [508]	Mata de Galeria	Cerrado	Milho - Safrinha
## [511]	Milho - Safrinha	Campo Seco	Campo Úmido
## [514]	Cerrado	Campo Seco	Milho - Safrinha
## [517]	Milho - Safrinha	Campo Seco	Campo Úmido
## [520]	Milho - Safrinha	Mata de Galeria	Campo Úmido
## [523]	Cerrado	Campo Úmido	Campo Úmido
## [526]	Campo Seco	Campo Úmido	Cerrado
## [529]	Campo Úmido	Milho - Safrinha	Cerrado
## [532]	Campo Úmido	Campo Seco	Campo Úmido
## [535]	Milho - Safrinha	Campo Seco	Milho - Safrinha
## [538]	Milho - Safrinha	Cerrado	Mata de Galeria
## [541]	Campo Seco	Milho - Safrinha	Campo Seco
## [544]	Campo Úmido	Campo Seco	Mata de Galeria
## [547]	Campo Seco	Campo Seco	Campo Seco
## [550]	Milho - Safrinha	Campo Seco	Cerrado
## [553]	Milho - Safrinha	Campo Seco	Campo Seco
## [556]	Campo Úmido	Campo Úmido	Milho - Safrinha
## [559]	Cerrado	Campo Úmido	Mata de Galeria
## [562]	Campo Úmido	Campo Seco	Campo Úmido
## [565]	Milho - Safrinha	Cerrado	Milho - Safrinha

## [568]	Milho - Safrinha	Milho - Safrinha	Campo Úmido
## [571]	Cerrado	Milho - Safrinha	Milho - Safrinha
## [574]	Campo Seco	Campo Úmido	Cerrado
## [577]	Milho - Safrinha	Mata de Galeria	Mata de Galeria
## [580]	Campo Úmido	Campo Úmido	Campo Úmido
## [583]	Campo Úmido	Campo Seco	Campo Úmido
## [586]	Milho - Safrinha	Milho - Safrinha	Campo Seco
## [589]	Milho - Safrinha	Cerrado	Milho - Safrinha
## [592]	Milho - Safrinha	Campo Seco	Campo Úmido
## [595]	Campo Úmido	Campo Seco	Campo Úmido
## [598]	Campo Úmido	Milho - Safrinha	Milho - Safrinha
## [601]	Milho - Safrinha	Campo Úmido	Campo Úmido
## [604]	Cerrado	Campo Seco	Campo Úmido
## [607]	Campo Seco	Campo Úmido	Campo Úmido
## [610]	Milho - Safrinha	Campo Úmido	Campo Úmido
## [613]	Campo Seco	Milho - Safrinha	Milho - Safrinha
## [616]	Campo Seco	Campo Seco	Campo Seco
## [619]	Cerrado	Campo Úmido	Cerrado
## [622]	Milho - Safrinha	Campo Úmido	Milho - Safrinha
## [625]	Campo Úmido	Campo Úmido	Campo Úmido
## [628]	Milho - Safrinha	Campo Seco	Campo Seco
## [631]	Campo Úmido	Cerrado	Cerrado
## [634]	Milho - Safrinha	Campo Seco	Campo Úmido
## [637]	Campo Úmido	Campo Úmido	Campo Seco
## [640]	Campo Seco	Campo Seco	Campo Seco
## [643]	Milho - Safrinha	Milho - Safrinha	Cana-de-Açúcar
## [646]	Campo Seco	Campo Seco	Milho - Safrinha
## [649]	Mata de Galeria	Mata de Galeria	Milho - Safrinha
## [652]	Não Disponível - Vala	Milho - Safrinha	Cerrado
## [655]	Campo Seco	Milho - Safrinha	Campo Úmido
## [658]	Campo Seco	Campo Úmido	Milho - Safrinha
## [661]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
## [664]	Milho - Safrinha	Campo Seco	Campo Seco
## [667]	Campo Seco	Campo Seco	Campo Seco
## [670]	Mata de Galeria	Campo Seco	Milho - Safrinha
## [673]	Mata de Galeria	Campo Seco	Cerrado
## [676]	Mata de Galeria	Campo Seco	Cerrado
## [679]	Campo Seco	Campo Seco	Campo Úmido
## [682]	Milho - Safrinha	Milho - Safrinha	Campo Seco
## [685]	Milho - Safrinha	Campo Seco	Campo Seco
## [688]	Campo Seco	Campo Úmido	Campo Seco
## [691]	Campo Seco	Campo Úmido	Campo Seco
## [694]	Mata de Galeria	Campo Seco	Campo Úmido
## [697]	Cerrado	Campo Úmido	Campo Seco
## [700]	Campo Úmido	Milho - Safrinha	Cerrado
## [703]	Campo Seco	Cerrado	Campo Úmido
## [706]	Mata de Galeria	Campo Úmido	Campo Seco
## [709]	Milho - Safrinha	Campo Seco	Campo Úmido
## [712]	Mata de Galeria	Campo Seco	Milho - Safrinha
## [715]	Cerrado	Cerrado	Campo Seco
## [718]	Campo Seco	Campo Seco	Campo Seco
## [721]	Campo Seco	Cerrado	Mata de Galeria
## [724]	Campo Úmido	Campo Úmido	Cerrado
## [727]	Cerrado	Cerrado	Campo Seco

```
## [730] Milho - Safrinha      Milho - Safrinha      Campo Seco
## [733] Campo Seco                Cerrado                Campo Úmido
## [736] Campo Seco                Campo Seco             Campo Seco
## [739] Campo Seco                Campo Seco             Campo Úmido
## [742] Milho - Safrinha          Campo Seco             Campo Seco
## [745] Campo Seco                Campo Seco             Campo Seco
## [748] Campo Seco                Campo Úmido            Campo Úmido
## [751] Campo Seco                Campo Seco             Campo Seco
## [754] Campo Seco                Campo Seco             Campo Seco
## [757] Mata de Galeria           Campo Seco             Cerrado
## [760] Campo Seco                Campo Úmido            Milho - Safrinha
## [763] Milho - Safrinha          Campo Seco             Milho - Safrinha
## [766] Milho - Safrinha          Milho - Safrinha       Campo Úmido
## [769] Campo Seco                Milho - Safrinha       Campo Úmido
## [772] Campo Seco                Milho - Safrinha       Campo Úmido
## [775] Campo Seco                Campo Seco             Campo Seco
## [778] Campo Seco
## 7 Levels: Campo Seco Campo Úmido Cana-de-Açúcar ... Não Disponível - Vala
length(levels(map.olhos.oeste$uso_terra))

## [1] 7
length(levels(map.olhos.oeste$classe))

## [1] 8
map.olhos.oeste$data.colheita[!is.na(map.olhos.oeste$data.colheita)]

## Date of length 0
str(map.olhos.oeste)

## Classes 'sf' and 'data.frame': 778 obs. of 7 variables:
## $ uso_terra : Factor w/ 7 levels "Campo Seco","Campo Úmido",...: 1 1 4 1 1 1 1 1 1 1 ...
## $ geometry :sfc_MULTIPOLYGON of length 778; first list element: List of 1
## ..$ :List of 1
## .. ..$ : num [1:4, 1:2] 291505 291495 291505 291505 7980836 ...
## ..- attr(*, "class")= chr "XY" "MULTIPOLYGON" "sfg"
## $ data.colheita: Date, format: NA NA ...
## $ julian : num NA NA NA NA NA NA NA NA NA NA NA ...
## ..- attr(*, "origin")= Date, format: "1970-01-01"
## $ name : chr "Olhos Oeste" "Olhos Oeste" "Olhos Oeste" "Olhos Oeste" ...
## $ classe : Factor w/ 8 levels "Campo Seco","Campo Úmido",...: 1 1 4 1 1 1 1 1 1 1 ...
## $ classe.num : num 1 1 4 1 1 1 1 1 1 1 ...
## - attr(*, "sf_column")= chr "geometry"
## - attr(*, "agr")= Factor w/ 3 levels "constant","aggregate",...: NA NA NA NA NA NA
## ..- attr(*, "names")= chr "uso_terra" "data.colheita" "julian" "name" ...

# pontal
map.pontal <- sf::st_read(dsn = 'maps/Pontal', layer = 'pontal') %>%
  dplyr::rename(uso_terra = CLASS_A_19) %>%
  dplyr::mutate(data.colheita = lubridate::ymd(DATA_COLHE) + days(1),
    julian = julian(data.colheita),
    name = 'Pontal',
    classe = factor(uso_terra, levels = lu.classes),
    classe.num = factor(classe, levels = lu.classes, labels = 1:length(lu.classes)) %>% as.numeric())
```

```
## Reading layer 'pontal' from data source 'C:\Users\bebs0001\Documents\Movimento_Queixadas_PNEmas\maps'
## Simple feature collection with 370 features and 2 fields
## geometry type:  MULTIPOLYGON
## dimension:      XY
## bbox:           xmin: 285520.3 ymin: 7966430 xmax: 291981.5 ymax: 7972519
## epsg (SRID):    NA
## proj4string:     +proj=utm +zone=22 +south +ellps=GRS80 +units=m +no_defs
```

```
# Check
```

```
map.pontal$uso_terra
```

##	[1]	Campo Seco	Campo Seco	Campo Seco
##	[4]	Campo Seco	Campo Seco	Campo Úmido
##	[7]	Campo Seco	Campo Seco	Campo Seco
##	[10]	Campo Seco	Campo Seco	Campo Úmido
##	[13]	Cana-de-Açúcar	Campo Seco	Campo Seco
##	[16]	Campo Seco	Campo Seco	Mata de Galeria
##	[19]	Campo Seco	Campo Úmido	Campo Seco
##	[22]	Cerrado	Campo Úmido	Não Disponível - Vala
##	[25]	Campo Úmido	Campo Úmido	Cerrado
##	[28]	Campo Úmido	Cerrado	Campo Úmido
##	[31]	Campo Seco	Campo Seco	Cana-de-Açúcar
##	[34]	Campo Seco	Campo Seco	Mata de Galeria
##	[37]	Campo Úmido	Campo Seco	Milho - Safrinha
##	[40]	Campo Úmido	Cerrado	Campo Úmido
##	[43]	Campo Seco	Mata de Galeria	Campo Seco
##	[46]	Cerrado	Milho - Safrinha	Milho - Safrinha
##	[49]	Mata de Galeria	Cerrado	Mata de Galeria
##	[52]	Campo Seco	Mata de Galeria	Campo Úmido
##	[55]	Campo Úmido	Campo Seco	Campo Úmido
##	[58]	Mata de Galeria	Campo Úmido	Mata de Galeria
##	[61]	Campo Seco	Mata de Galeria	Mata de Galeria
##	[64]	Mata de Galeria	Mata de Galeria	Campo Seco
##	[67]	Mata de Galeria	Mata de Galeria	Campo Seco
##	[70]	Mata de Galeria	Mata de Galeria	Mata de Galeria
##	[73]	Mata de Galeria	Milho - Safrinha	Milho - Safrinha
##	[76]	Cerrado	Campo Úmido	Mata de Galeria
##	[79]	Cerrado	Campo Seco	Campo Úmido
##	[82]	Campo Seco	Campo Úmido	Cerrado
##	[85]	Campo Seco	Cerrado	Campo Seco
##	[88]	Campo Seco	Milho - Safrinha	Milho - Safrinha
##	[91]	Milho - Safrinha	Milho - Safrinha	Milho - Safrinha
##	[94]	Campo Úmido	Campo Seco	Milho - Safrinha
##	[97]	Campo Seco	Mata de Galeria	Cerrado
##	[100]	Campo Seco	Campo Úmido	Campo Seco
##	[103]	Campo Seco	Campo Seco	Campo Seco
##	[106]	Campo Seco	Campo Úmido	Campo Seco
##	[109]	Campo Úmido	Campo Úmido	Campo Seco
##	[112]	Cana-de-Açúcar	Cerrado	Campo Seco
##	[115]	Cerrado	Cerrado	Cerrado
##	[118]	Cerrado	Cerrado	Milho - Safrinha
##	[121]	Cerrado	Milho - Safrinha	Milho - Safrinha
##	[124]	Campo Úmido	Campo Úmido	Cerrado
##	[127]	Campo Úmido	Cerrado	Campo Seco
##	[130]	Campo Seco	Campo Seco	Campo Seco

## [133]	Cerrado	Campo Seco	Mata de Galeria
## [136]	Milho - Safrinha	Cerrado	Cerrado
## [139]	Campo Úmido	Milho - Safrinha	Campo Seco
## [142]	Cerrado	Cerrado	Cerrado
## [145]	Cerrado	Campo Seco	Cerrado
## [148]	Cerrado	Cerrado	Cerrado
## [151]	Cerrado	Campo Seco	Cerrado
## [154]	Cerrado	Campo Úmido	Campo Úmido
## [157]	Campo Úmido	Cerrado	Campo Seco
## [160]	Cerrado	Campo Seco	Cerrado
## [163]	Cerrado	Cerrado	Cerrado
## [166]	Campo Úmido	Campo Seco	Cerrado
## [169]	Cerrado	Campo Úmido	Cerrado
## [172]	Campo Úmido	Campo Seco	Cerrado
## [175]	Campo Seco	Cerrado	Campo Úmido
## [178]	Cerrado	Cerrado	Cerrado
## [181]	Campo Seco	Cana-de-Açúcar	Cerrado
## [184]	Campo Seco	Cerrado	Campo Seco
## [187]	Milho - Safrinha	Campo Úmido	Milho - Safrinha
## [190]	Campo Seco	Campo Seco	Cerrado
## [193]	Cerrado	Milho - Safrinha	Cerrado
## [196]	Cerrado	Cerrado	Cerrado
## [199]	Cerrado	Cerrado	Cerrado
## [202]	Milho - Safrinha	Milho - Safrinha	Cerrado
## [205]	Cerrado	Cerrado	Campo Úmido
## [208]	Cana-de-Açúcar	Campo Seco	Campo Úmido
## [211]	Campo Úmido	Campo Úmido	Cerrado
## [214]	Campo Úmido	Campo Úmido	Mata de Galeria
## [217]	Campo Úmido	Cerrado	Campo Úmido
## [220]	Cerrado	Cerrado	Mata de Galeria
## [223]	Cerrado	Cerrado	Mata de Galeria
## [226]	Cerrado	Mata de Galeria	Cerrado
## [229]	Campo Úmido	Cerrado	Mata de Galeria
## [232]	Campo Úmido	Mata de Galeria	Campo Úmido
## [235]	Cerrado	Campo Úmido	Cerrado
## [238]	Cerrado	Campo Úmido	Campo Úmido
## [241]	Cerrado	Campo Úmido	Cerrado
## [244]	Campo Seco	Cerrado	Campo Úmido
## [247]	Campo Seco	Cerrado	Campo Úmido
## [250]	Cana-de-Açúcar	Campo Úmido	Mata de Galeria
## [253]	Cerrado	Cerrado	Milho - Safrinha
## [256]	Cerrado	Cerrado	Cerrado
## [259]	Campo Úmido	Campo Seco	Cana-de-Açúcar
## [262]	Campo Úmido	Campo Úmido	Milho - Safrinha
## [265]	Cana-de-Açúcar	Cerrado	Campo Úmido
## [268]	Campo Seco	Cerrado	Campo Úmido
## [271]	Cerrado	Milho - Safrinha	Campo Úmido
## [274]	Campo Úmido	Campo Seco	Campo Úmido
## [277]	Campo Úmido	Campo Úmido	Campo Úmido
## [280]	Campo Úmido	Campo Úmido	Cerrado
## [283]	Campo Úmido	Campo Úmido	Cerrado
## [286]	Milho - Safrinha	Cerrado	Cerrado
## [289]	Campo Úmido	Cana-de-Açúcar	Mata de Galeria
## [292]	Campo Úmido	Campo Seco	Campo Úmido

```
## [295] Campo Úmido          Cerrado          Campo Úmido
## [298] Campo Úmido          Cerrado          Campo Seco
## [301] Campo Úmido          Cerrado          Mata de Galeria
## [304] Cerrado              Campo Úmido      Cerrado
## [307] Campo Úmido          Cerrado          Mata de Galeria
## [310] Campo Úmido          Mata de Galeria  Cerrado
## [313] Cerrado              Cerrado          Cerrado
## [316] Mata de Galeria      Cana-de-Açúcar   Cerrado
## [319] Cerrado              Campo Úmido      Cerrado
## [322] Cerrado              Campo Úmido      Cerrado
## [325] Campo Seco           Campo Seco       Campo Úmido
## [328] Cerrado              Cerrado          Campo Úmido
## [331] Mata de Galeria      Cerrado          Campo Úmido
## [334] Campo Úmido          Campo Seco       Campo Seco
## [337] Campo Úmido          Cana-de-Açúcar   Campo Seco
## [340] Cana-de-Açúcar       Cana-de-Açúcar   Milho - Safrinha
## [343] Cana-de-Açúcar       Milho - Safrinha Cana-de-Açúcar
## [346] Cerrado              Cerrado          Cana-de-Açúcar
## [349] Cana-de-Açúcar       Cana-de-Açúcar   Solo Exposto
## [352] Cerrado              Cerrado          Milho - Safrinha
## [355] Milho - Safrinha     Milho - Safrinha Milho - Safrinha
## [358] Cerrado              Cerrado          Cerrado
## [361] Milho - Safrinha     Milho - Safrinha Milho - Safrinha
## [364] Milho - Safrinha     Milho - Safrinha Milho - Safrinha
## [367] Milho - Safrinha     Milho - Safrinha Cana-de-Açúcar
## [370] Cana-de-Açúcar
## 8 Levels: Campo Seco Campo Úmido Cana-de-Açúcar ... Solo Exposto
```

```
length(levels(map.pontal$uso_terra))
```

```
## [1] 8
```

```
length(levels(map.pontal$classe))
```

```
## [1] 8
```

```
map.pontal$data.colheita[!is.na(map.pontal$data.colheita)]
```

```
## [1] "2019-06-16" "2019-07-04" "2019-07-28" "2019-06-24" "2019-06-28"
## [6] "2019-06-27" "2019-06-30" "2019-06-30" "2019-06-30" "2019-06-30"
## [11] "2019-07-10" "2019-07-23" "2019-07-31"
```

```
str(map.pontal)
```

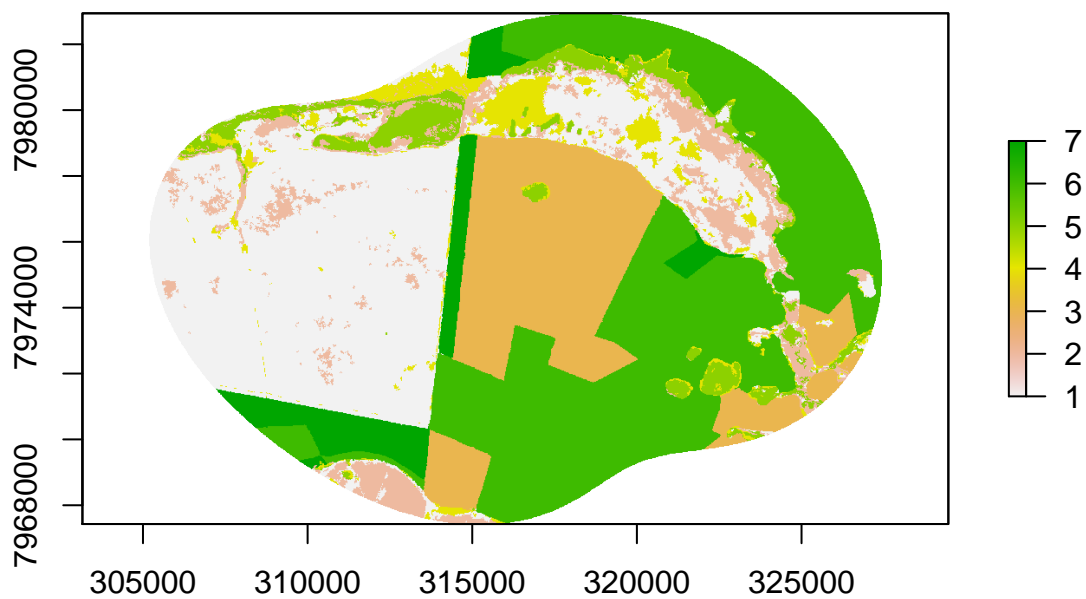
```
## Classes 'sf' and 'data.frame': 370 obs. of 8 variables:
## $ uso_terra : Factor w/ 8 levels "Campo Seco","Campo Úmido",...: 1 1 1 1 1 2 1 1 1 1 ...
## $ DATA_COLHE : Date, format: NA NA ...
## $ geometry :sfc_MULTIPOLYGON of length 370; first list element: List of 1
## ..$ :List of 1
## .. ..$ : num [1:25, 1:2] 289541 289541 289521 289521 289501 ...
## ..- attr(*, "class")= chr "XY" "MULTIPOLYGON" "sfg"
## $ data.colheita: Date, format: NA NA ...
## $ julian : num NA NA NA NA NA NA NA NA NA NA NA ...
## ..- attr(*, "origin")= Date, format: "1970-01-01"
## $ name : chr "Pontal" "Pontal" "Pontal" "Pontal" ...
## $ classe : Factor w/ 8 levels "Campo Seco","Campo Úmido",...: 1 1 1 1 1 2 1 1 1 1 ...
## $ classe.num : num 1 1 1 1 1 2 1 1 1 1 ...
```



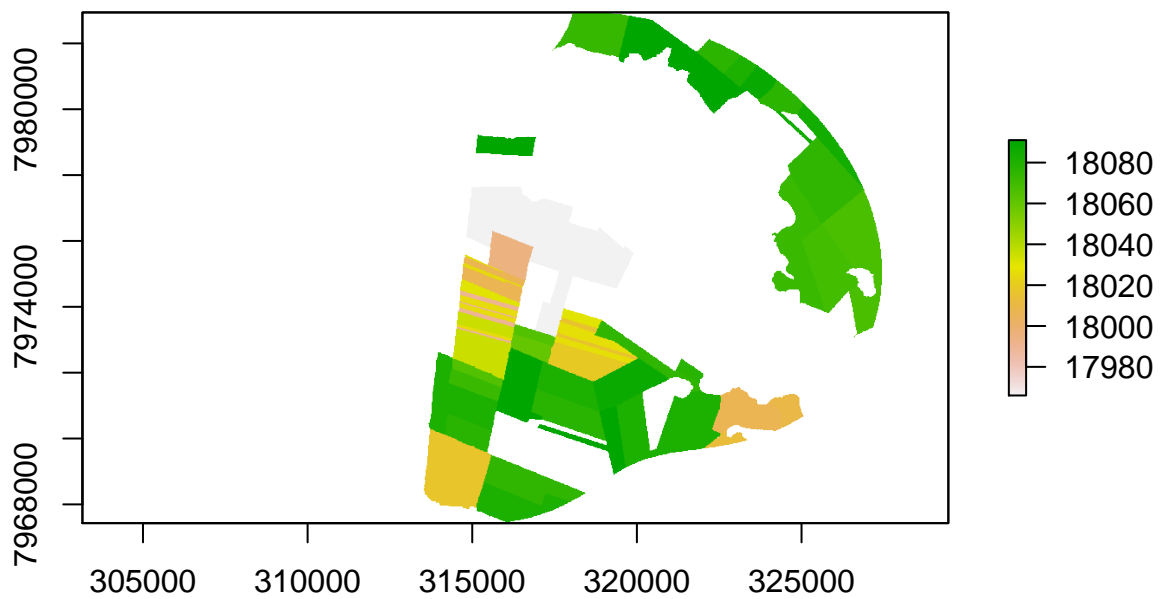
```
## - attr(*, "sf_column")= chr "geometry"
## - attr(*, "agr")= Factor w/ 3 levels "constant","aggregate",...: NA NA NA NA NA NA NA
##   ..- attr(*, "names")= chr  "uso_terra" "DATA_COLHE" "data.colheita" "julian" ...

# rasterize

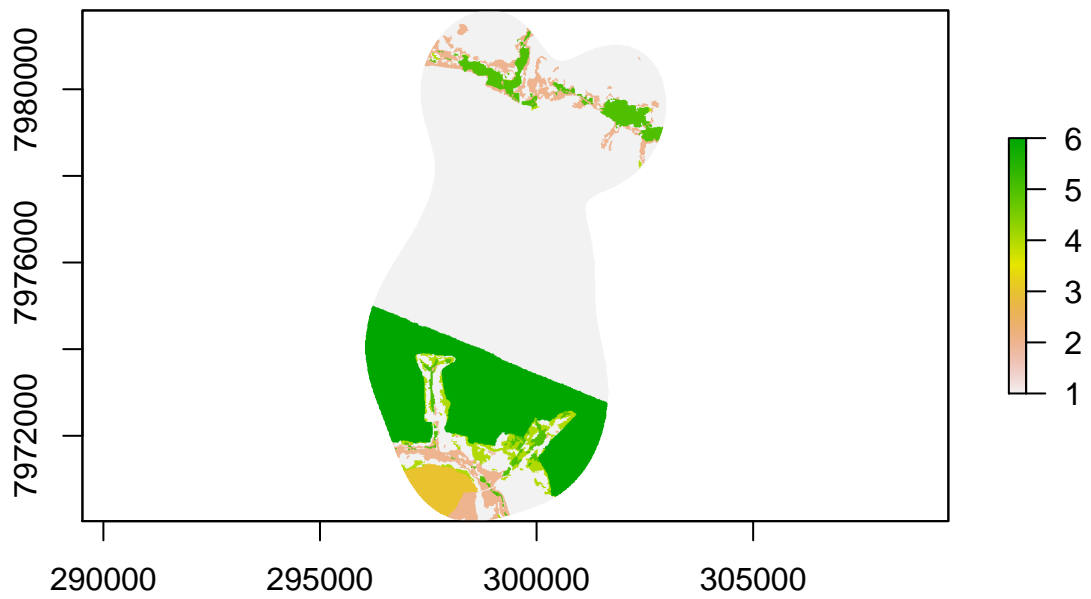
# alto formoso
r.af <- raster(map.alto.formoso, res = 10)
rast.alto.formoso.class <- fasterize::fasterize(sf = map.alto.formoso, raster = r.af, field = 'classe.m
raster::plot(rast.alto.formoso.class)
```



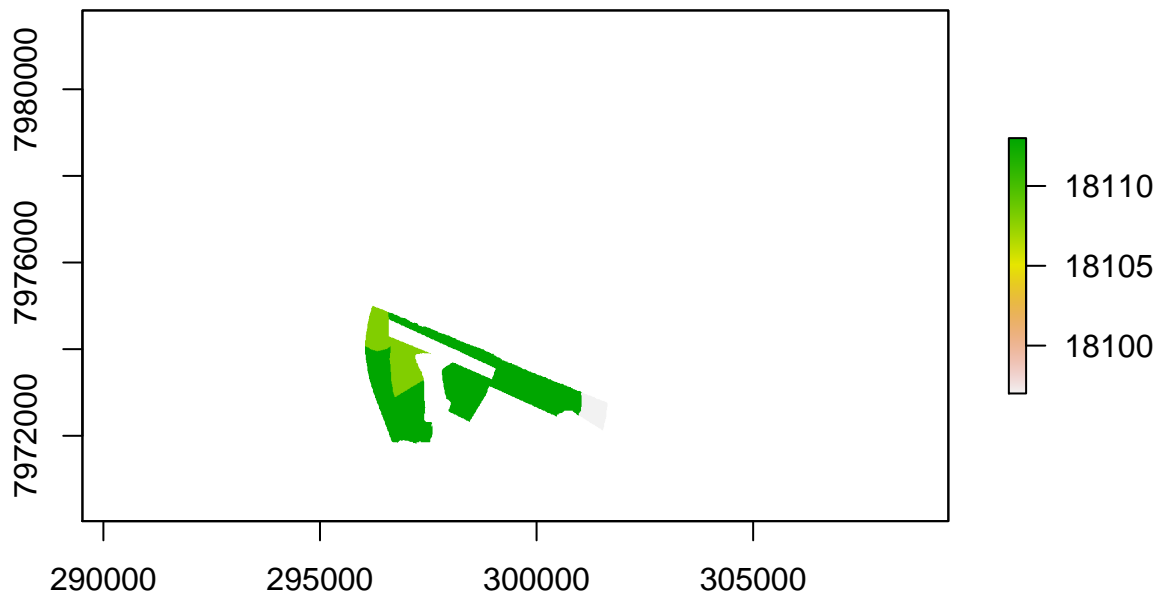
```
rast.alto.formoso.julian <- fasterize::fasterize(sf = map.alto.formoso, raster = r.af, field = 'julian')
raster::plot(rast.alto.formoso.julian)
```



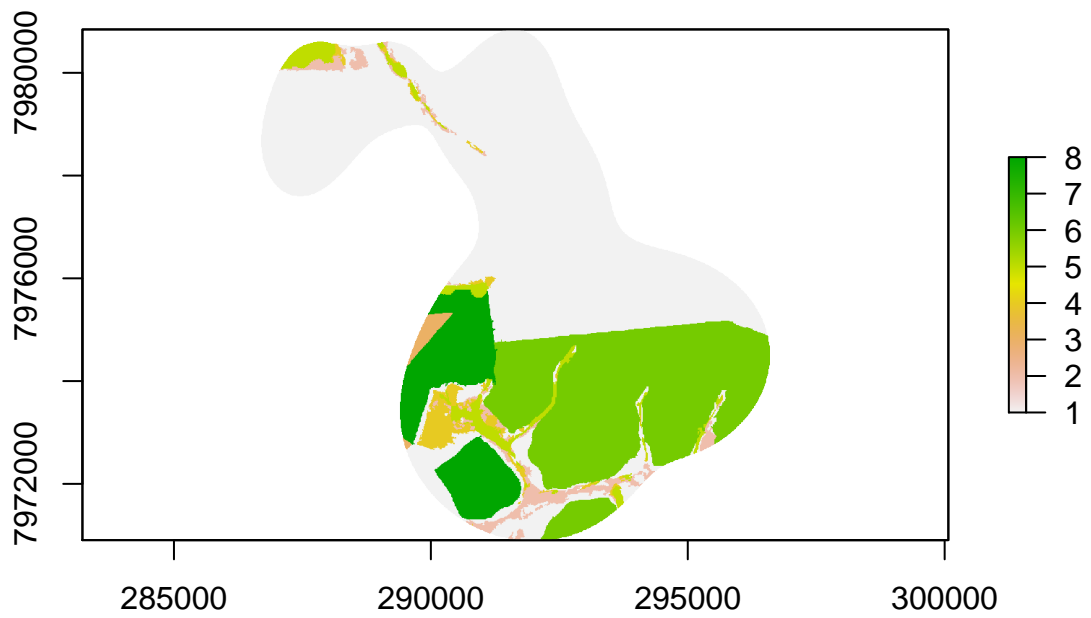
```
# olhos leste
r.ol <- raster(map.olhos.leste, res = 10)
rast.olhos.leste.class <- fasterize::fasterize(sf = map.olhos.leste, raster = r.ol, field = 'classe.num')
raster::plot(rast.olhos.leste.class)
```



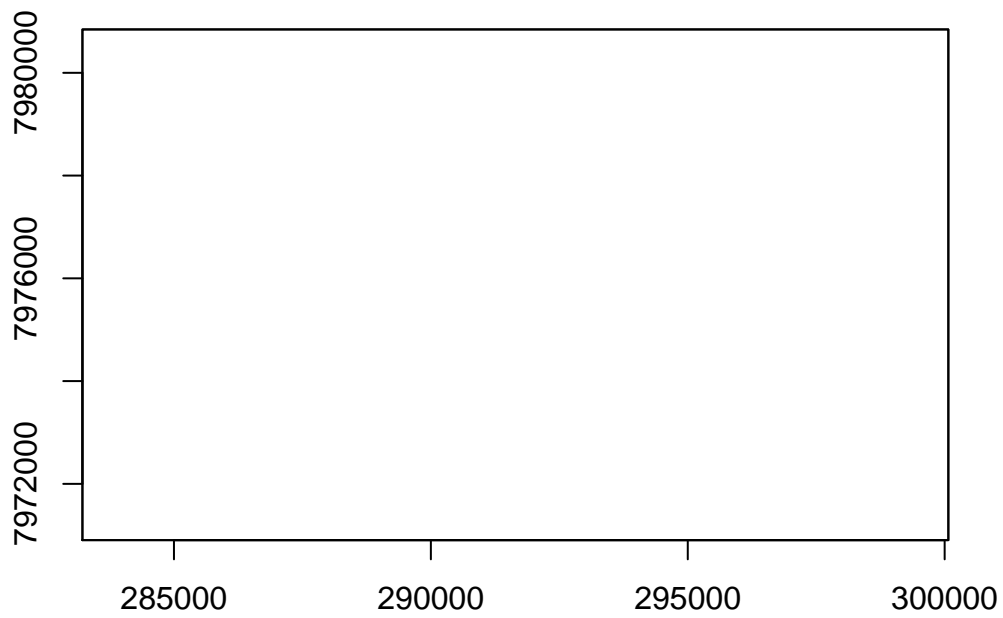
```
rast.olhos.leste.julian <- fasterize::fasterize(sf = map.olhos.leste, raster = r.ol, field = 'julian')
raster::plot(rast.olhos.leste.julian)
```



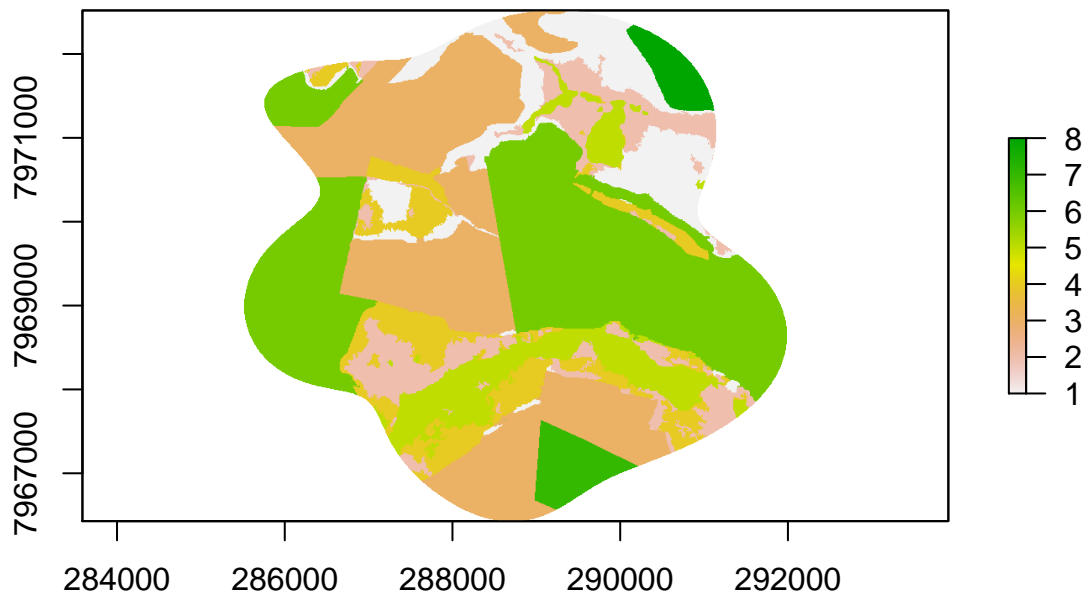
```
# olhos oeste
r.oo <- raster(map.olhos.oeste, res = 10)
rast.olhos.oeste.class <- fasterize::fasterize(sf = map.olhos.oeste, raster = r.oo, field = 'classe.num')
raster::plot(rast.olhos.oeste.class)
```



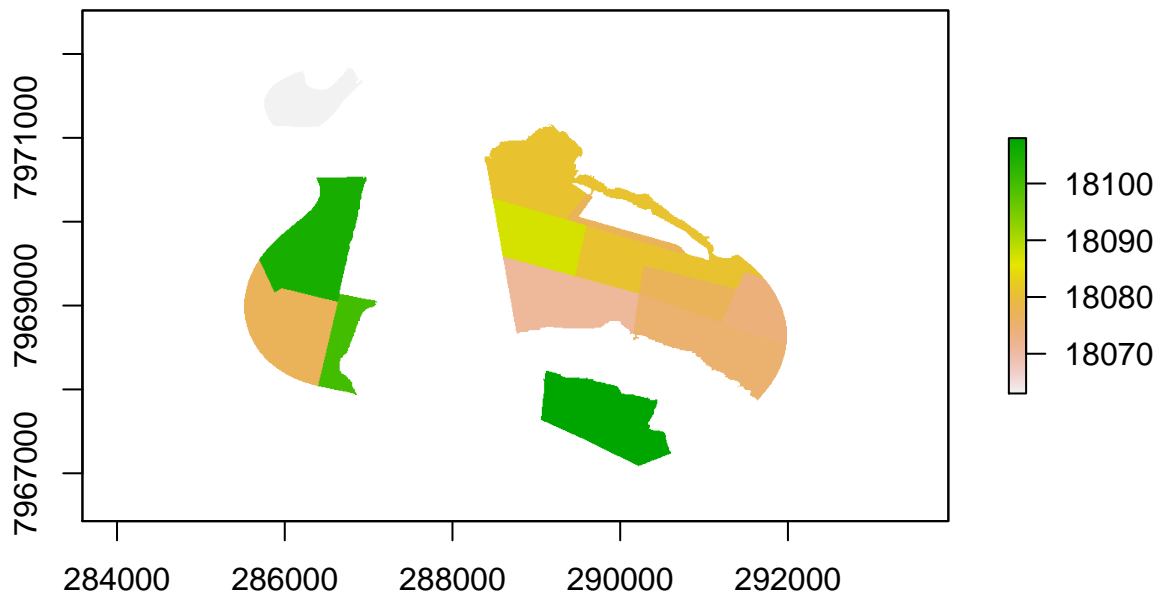
```
rast.olhos.oeste.julian <- fasterize::fasterize(sf = map.olhos.oeste, raster = r.oo, field = 'julian')
raster::plot(rast.olhos.oeste.julian)
```



```
# pontal  
r.po <- raster(map.pontal, res = 10)  
rast.pontal.class <- fasterize::fasterize(sf = map.pontal, raster = r.po, field = 'classe.num')  
raster::plot(rast.pontal.class)
```



```
rast.pontal.julian <- fasterize::fasterize(sf = map.pontal, raster = r.po, field = 'julian')  
raster::plot(rast.pontal.julian)
```



```
# merge raster
origin(rast.alto.formoso.class)

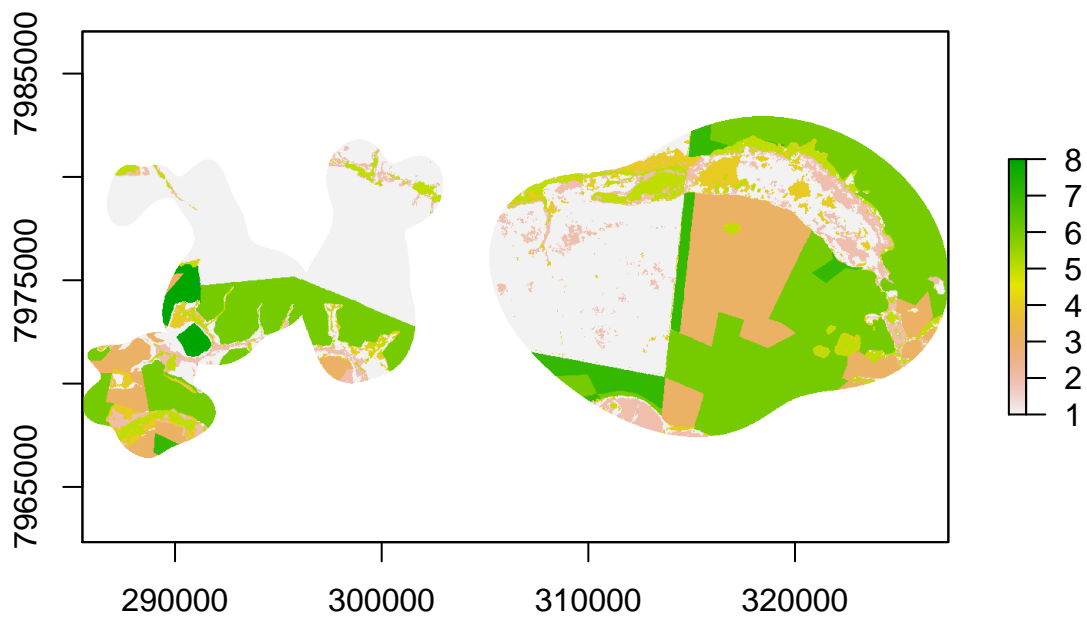
## [1] -4.6689803 -0.1740276
origin(rast.olhos.oeste.class)

## [1] -4.614977  4.232343
origin(rast.olhos.leste.class)

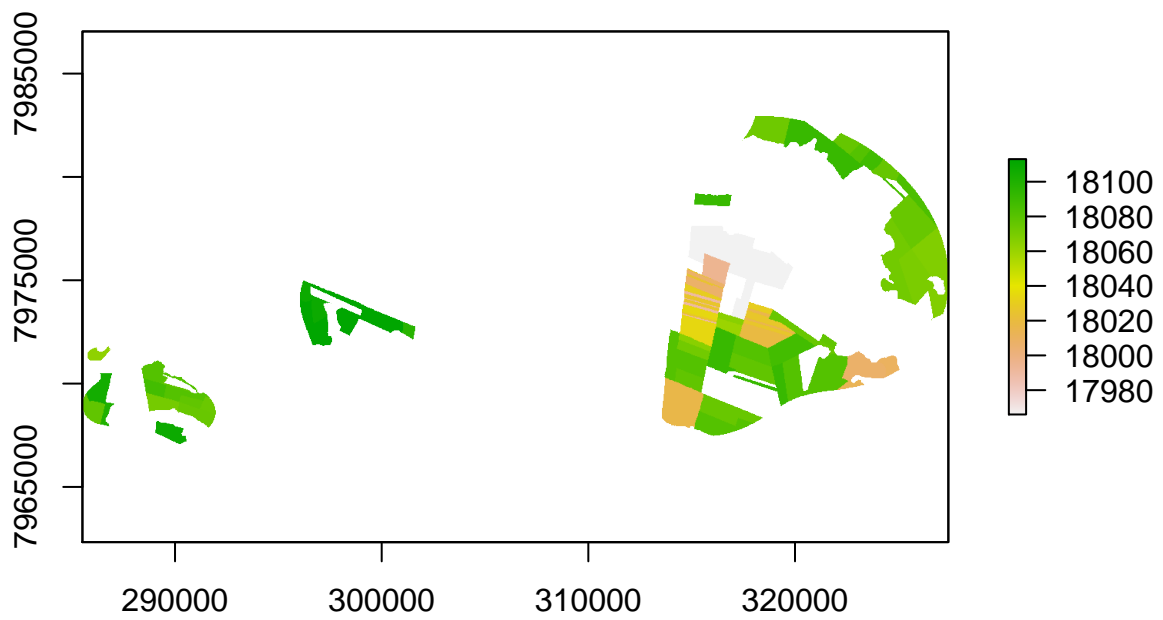
## [1]  0.9894084 -0.4828134
origin(rast.pontal.class)

## [1]  0.3395051 -0.8380321

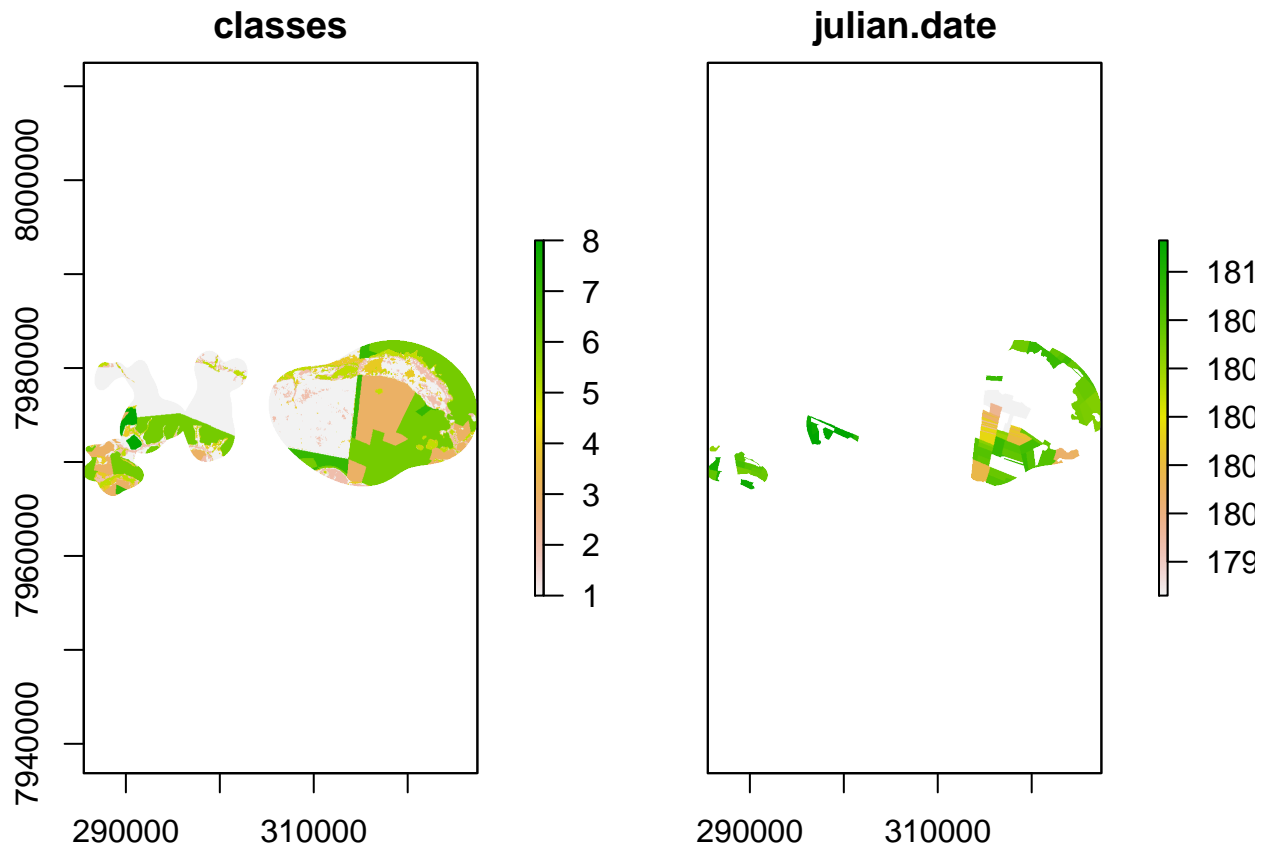
# class
rast.classes <- raster::merge(rast.alto.formoso.class, rast.olhos.oeste.class,
                              rast.olhos.leste.class, rast.pontal.class, tolerance = 4)
raster::plot(rast.classes)
```

```
# julian
rast.julian <- raster::merge(rast.alto.formoso.julian, rast.olhos.oeste.julian,
                             rast.olhos.leste.julian, rast.pontal.julian, tolerance = 4)
raster::plot(rast.julian)
```



```
# maps
maps <- raster::stack(rast.classes, rast.julian)
names(maps) <- c('classes', 'julian.date')
raster::plot(maps)
```



Step-selection functions for a single individual

Now we perform a step selection analysis for a single individual, just to get some understanding of how it is responding to the habitat covariates. Then we do the same for all individuals

```
coord.system <- as.character(maps@crs)

# select individual
mov.track.1 <- mov.track %>%
  amt::transform_coords(crs_to = coord.system) %>%
  dplyr::filter(name == 'Alto Formoso')

# check regularity
mov.track.1 %>%
  amt::summarize_sampling_rate()

## # A tibble: 1 x 9
##   min    q1   median mean    q3    max    sd    n unit
##   <table> <table> <table> <table> <table> <table> <dbl> <int> <chr>
## 1 27.25  29.8   30     30.89523 30.23333 181.7333 7.04  4524 min

# resample
stps <- mov.track.1 %>%
  amt::track_resample(rate = minutes(30), tolerance = minutes(10)) %>%
  amt::filter_min_n_burst(min_n = 3) %>%
  amt::steps_by_burst()
```

```

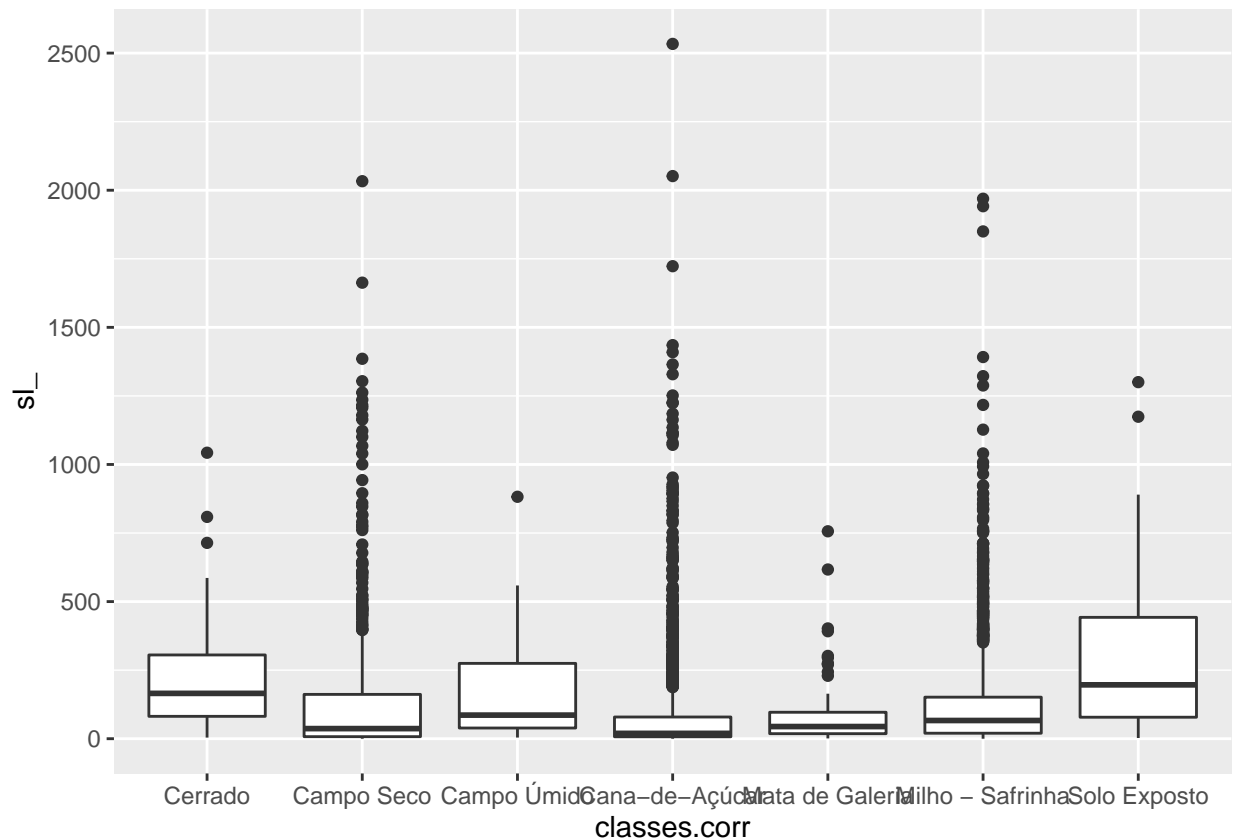
# explore covariates
eda1 <- stps %>%
  extract_covariates(maps, where = "start") %>%
  mutate(classes.lev = factor(classes, levels = 1:length(lu.classes), labels = lu.classes),
         dtm.harvest = ymd('1970-01-01') + days(julian.date),
         classes.corr = ifelse((classes.lev == lu.classes[3]) & (t1_ > dtm.harvest) & (t1_ < dtm.harvest),
                               lu.classes[7], as.character(classes.lev)),
         classes.corr = as.factor(ifelse((classes.corr == lu.classes[6]) & (t1_ > dtm.harvest) & !is.na(
                               lu.classes[7], as.character(classes.corr))),
         classes.corr = relevel(classes.corr, lu.classes[4])) %>%
  dplyr::filter(!is.na(classes.corr))

###
## Possibility: classificar o milho de maneira diferente apos a colheita; pode ser uma nova classe (dur

# Some plots to explore

# step length
eda1 %>%
  ggplot() +
  geom_boxplot(aes(x = classes.corr, y = sl_))

```



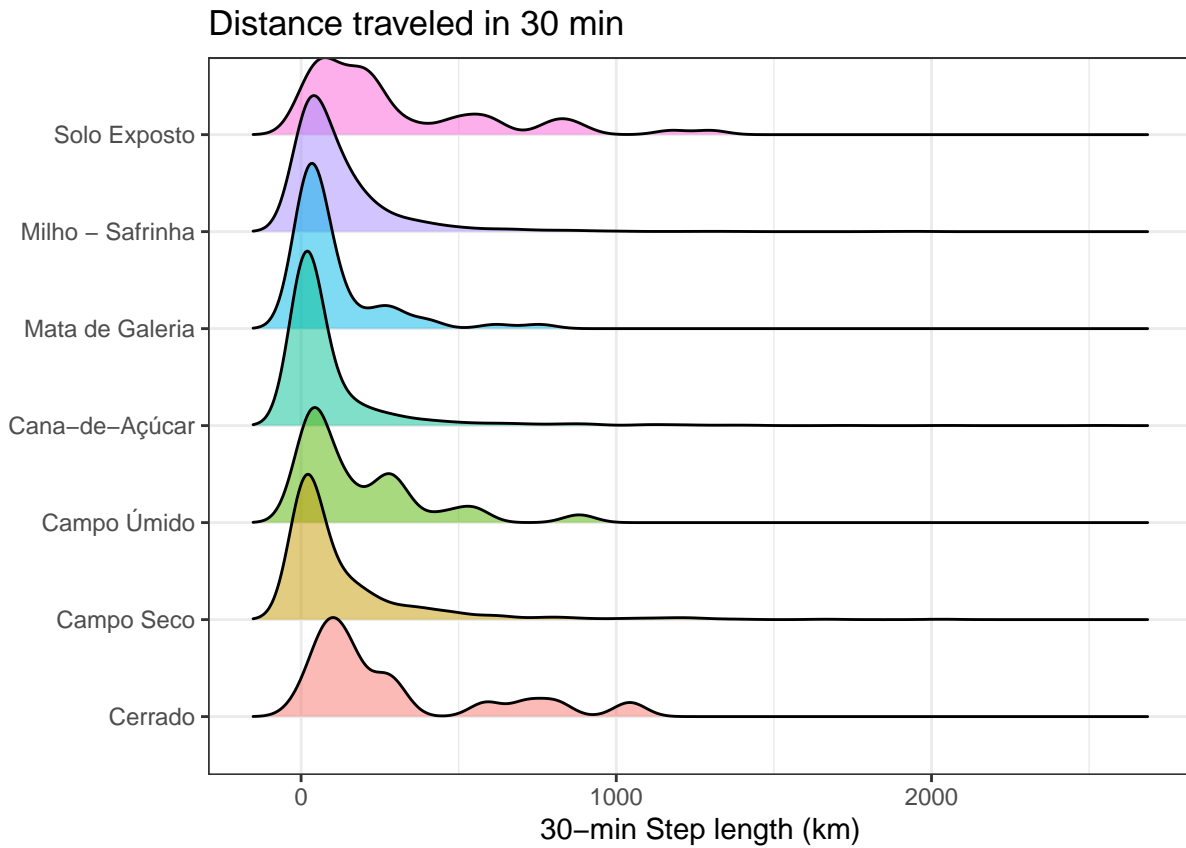
```

g1 <- ggplot(data = eda1, aes(x = sl_, y = classes.corr, fill = classes.corr)) +
  ggridges::geom_density_ridges(alpha = 0.5) +
  theme_bw() +

```

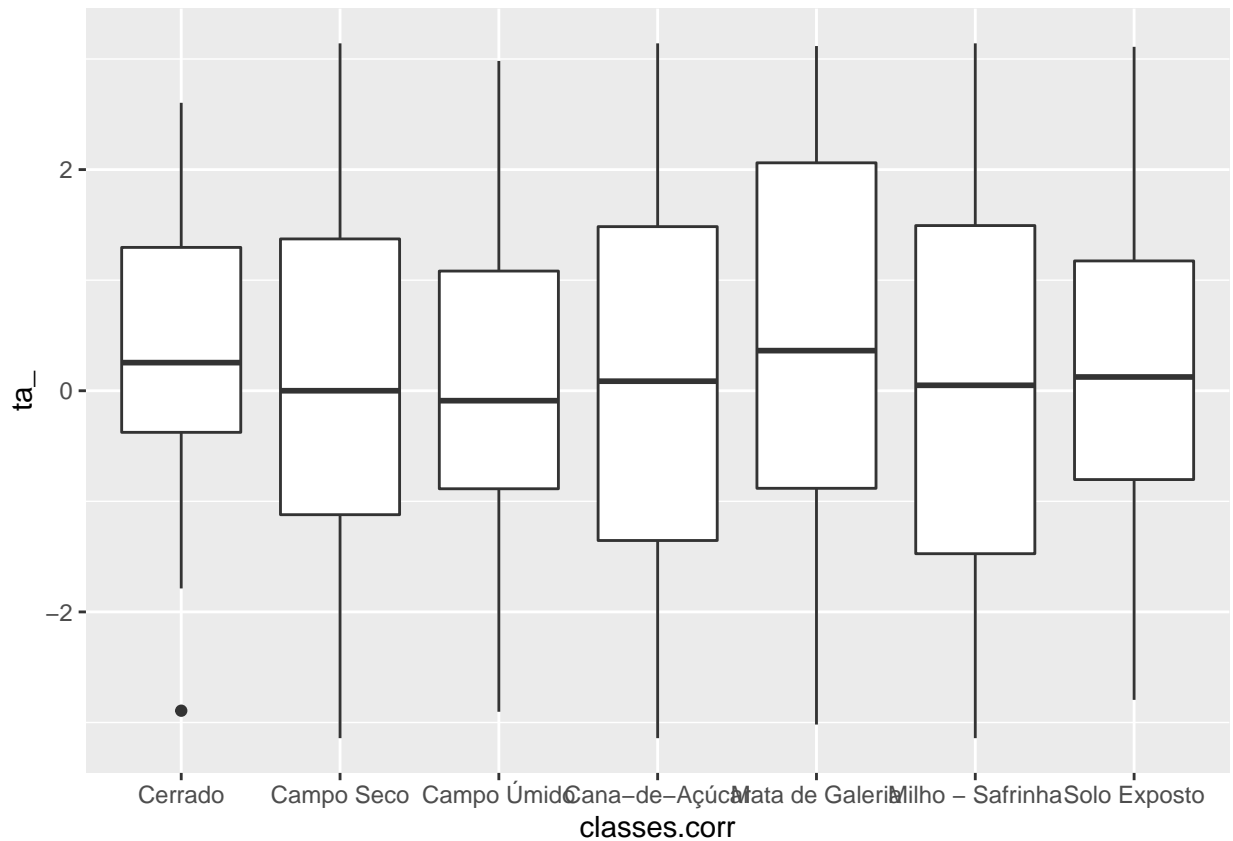
```
labs(x = '30-min Step length (km)', y = '',
     title = 'Distance traveled in 30 min') +
theme(legend.position = "none")
g1
```

```
## Picking joint bandwidth of 50.7
```



```
# turning angle
eda1 %>%
  ggplot() +
  geom_boxplot(aes(x = classes.corr, y = ta_))
```

```
## Warning: Removed 87 rows containing non-finite values (stat_boxplot).
```

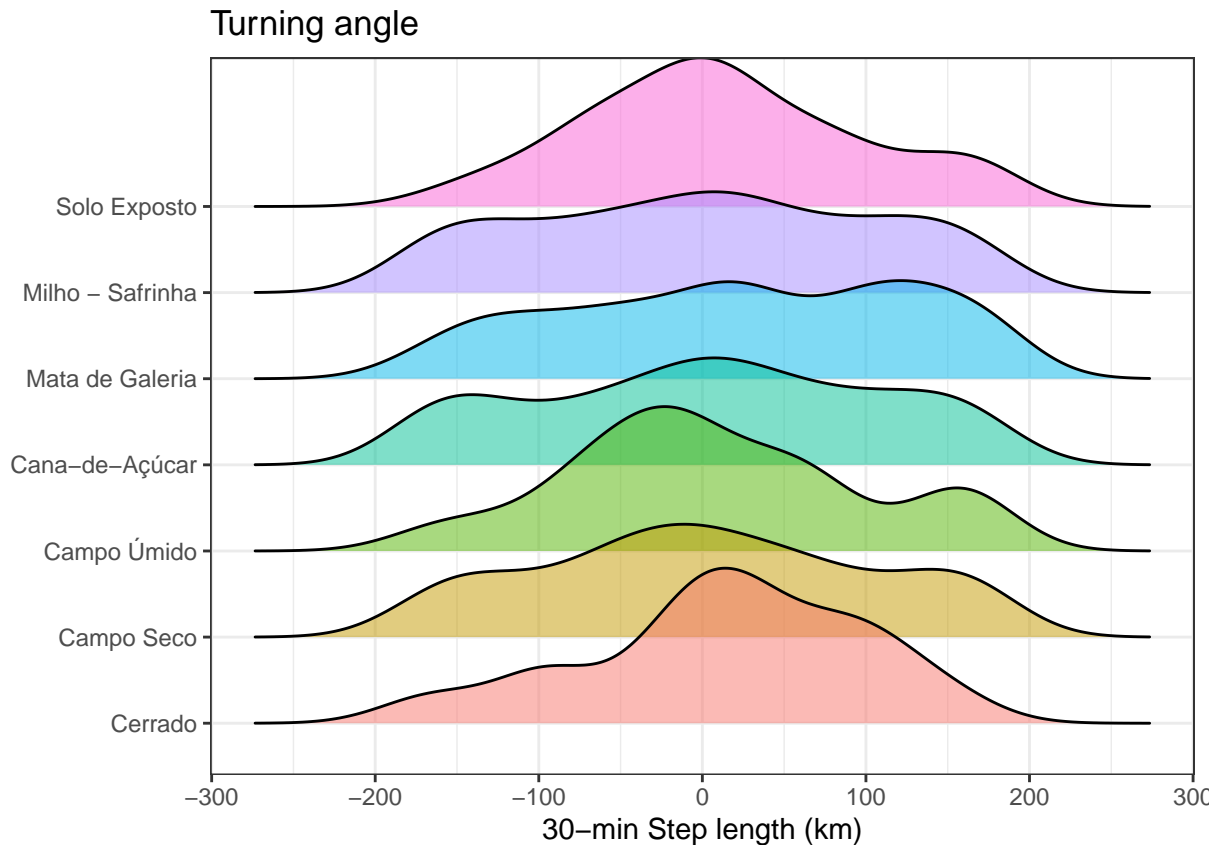


```
g2 <- ggplot(data = eda1, aes(x = ta_ * 180 / pi, y = classes.corr, fill = classes.corr)) +
  ggridges::geom_density_ridges(alpha = 0.5) +
  theme_bw() +
  labs(x = '30-min Step length (km)', y = '',
       title = 'Turning angle') +
  theme(legend.position = "none")
g2
```

```
## Picking joint bandwidth of 31.2
```

```
## Warning: Removed 87 rows containing non-finite values
```

```
## (stat_density_ridges).
```

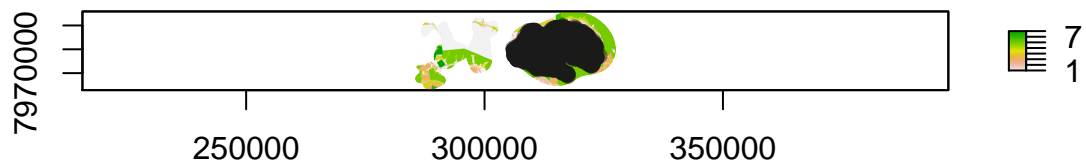
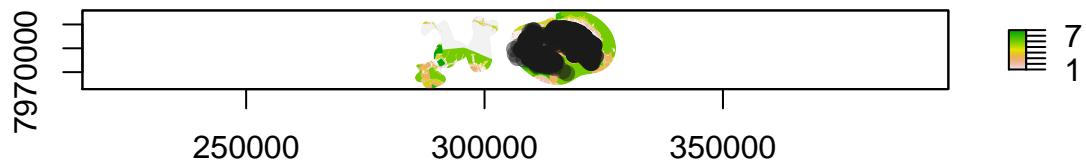


```
# ssf

# create random steps and extracting land use covariates
d1 <- stps %>%
  amt::random_steps(n = 9) %>%
  extract_covariates(maps, where = "end") %>%
  mutate(classes.lev = factor(classes, levels = 1:length(lu.classes), labels = lu.classes),
         dtm.harvest = ymd('1970-01-01') + days(julian.date),
         classes.corr = ifelse((classes.lev == lu.classes[3]) & (t2_ > dtm.harvest) & (t2_ < dtm.harvest),
                               lu.classes[7], as.character(classes.lev)),
         classes.corr = as.factor(ifelse((classes.corr == lu.classes[6]) & (t2_ > dtm.harvest) & !is.na(t2_),
                                         lu.classes[7], as.character(classes.corr))),
         classes.corr = relevel(classes.corr, lu.classes[4])) %>%
  dplyr::filter(!is.na(classes.corr)) %>%
  mutate(log_sl_ = log(sl_))
```

```
## Warning in random_steps.steps_xy(., n = 9): Step-lengths or turning angles
## contained NA, which were removed.
```

```
# plot
par(mfrow = c(2,1))
# used
plot(maps$classes)
points(stps$x2_, stps$y2_, pch = 19, col = grey(0.1, 0.5))
plot(maps$classes)
points(d1$x2_, d1$y2_, pch = 19, col = grey(0.1, 0.5))
```



```
par(mfrow = c(1,1))

# check steps that go outside the range area
which(is.na(d1$x2_) | is.na(d1$y2_))

## integer(0)
# no one, in this case!

# check if dates and classes are correctly classified
d1 %>%
  dplyr::filter(!is.na(julian.date)) %>%
  .[5500:6500,] %>%
  print(width = Inf, n = 1000)
```

```
## # A tibble: 1,001 x 18
##   burst_ step_id_ case_   x1_   y1_   x2_   y2_
##   *   <dbl>   <int> <lgl>   <dbl>   <dbl>   <dbl>   <dbl>
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## 2    14     1077 FALSE 314020. 7972237. 314012. 7972232.
## 3    14     1078 TRUE  314037. 7972254. 314055. 7972234.
## 4    14     1078 FALSE 314037. 7972254. 314039. 7972254.
## 5    14     1078 FALSE 314037. 7972254. 314082. 7972242.
## 6    14     1078 FALSE 314037. 7972254. 314054. 7972222.
## 7    14     1078 FALSE 314037. 7972254. 314039. 7972253.
## 8    14     1078 FALSE 314037. 7972254. 313926. 7972398.
## 9    14     1078 FALSE 314037. 7972254. 313965. 7972251.
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##	267	15	1108	FALSE	313935.	7972538.	313977.	7972522.
##	268	15	1109	TRUE	313980.	7972527.	313985.	7972524.
##	269	15	1109	FALSE	313980.	7972527.	313972.	7972536.
##	270	15	1109	FALSE	313980.	7972527.	313981.	7972526.
##	271	15	1109	FALSE	313980.	7972527.	314099.	7972489.
##	272	15	1109	FALSE	313980.	7972527.	314075.	7972462.
##	273	15	1109	FALSE	313980.	7972527.	314001.	7972494.
##	274	15	1109	FALSE	313980.	7972527.	313975.	7972530.
##	275	15	1110	TRUE	313985.	7972524.	314087.	7972544.
##	276	15	1110	FALSE	313985.	7972524.	314034.	7972455.
##	277	15	1110	FALSE	313985.	7972524.	314058.	7972310.
##	278	15	1110	FALSE	313985.	7972524.	314138.	7972550.
##	279	15	1110	FALSE	313985.	7972524.	313985.	7972524.

##	280	15	1110	FALSE	313985.	7972524.	313973.	7972466.
##	281	15	1110	FALSE	313985.	7972524.	313981.	7972546.
##	282	15	1110	FALSE	313985.	7972524.	313940.	7972528.
##	283	15	1111	TRUE	314087.	7972544.	314060.	7972491.
##	284	15	1111	FALSE	314087.	7972544.	314138.	7972541.
##	285	15	1111	FALSE	314087.	7972544.	314087.	7972545.
##	286	15	1111	FALSE	314087.	7972544.	314087.	7972544.
##	287	15	1111	FALSE	314087.	7972544.	314085.	7972545.
##	288	15	1111	FALSE	314087.	7972544.	314107.	7972564.
##	289	15	1111	FALSE	314087.	7972544.	314088.	7972545.
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##	291	15	1112	FALSE	314060.	7972491.	314074.	7972443.
##	292	15	1112	FALSE	314060.	7972491.	314058.	7972487.
##	293	15	1112	FALSE	314060.	7972491.	314039.	7972308.
##	294	15	1112	FALSE	314060.	7972491.	314081.	7972483.
##	295	15	1112	FALSE	314060.	7972491.	313966.	7972507.
##	296	15	1112	FALSE	314060.	7972491.	313918.	7971953.
##	297	15	1112	FALSE	314060.	7972491.	314009.	7972562.
##	298	15	1112	FALSE	314060.	7972491.	314321.	7972276.
##	299	15	1112	FALSE	314060.	7972491.	314059.	7972490.
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##	301	15	1113	FALSE	314058.	7972490.	314067.	7972482.
##	302	15	1113	FALSE	314058.	7972490.	314053.	7972490.
##	303	15	1113	FALSE	314058.	7972490.	314044.	7972451.
##	304	15	1113	FALSE	314058.	7972490.	314051.	7972492.
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##	306	15	1113	FALSE	314058.	7972490.	314015.	7972184.
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##	312	15	1114	FALSE	314048.	7972422.	314034.	7972407.
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##	316	15	1114	FALSE	314048.	7972422.	314048.	7972421.
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##	326	15	1115	FALSE	314047.	7972420.	313981.	7972439.
##	327	15	1116	TRUE	314046.	7972419.	314045.	7972418.
##	328	15	1116	FALSE	314046.	7972419.	314049.	7972410.
##	329	15	1116	FALSE	314046.	7972419.	314066.	7972439.
##	330	15	1116	FALSE	314046.	7972419.	314047.	7972418.
##	331	15	1116	FALSE	314046.	7972419.	314139.	7972325.
##	332	15	1116	FALSE	314046.	7972419.	313996.	7972376.
##	333	15	1116	FALSE	314046.	7972419.	314016.	7972389.

##	334	15	1117	TRUE	314045.	7972418.	314045.	7972418.
##	335	15	1117	FALSE	314045.	7972418.	314055.	7972418.
##	336	15	1117	FALSE	314045.	7972418.	314250.	7972374.
##	337	15	1117	FALSE	314045.	7972418.	314104.	7972330.
##	338	15	1117	FALSE	314045.	7972418.	314095.	7972421.
##	339	15	1117	FALSE	314045.	7972418.	314044.	7972417.
##	340	15	1117	FALSE	314045.	7972418.	313910.	7972347.
##	341	15	1117	FALSE	314045.	7972418.	313946.	7972442.
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##	343	15	1118	TRUE	314045.	7972418.	314047.	7972417.
##	344	15	1118	FALSE	314045.	7972418.	314030.	7972500.
##	345	15	1118	FALSE	314045.	7972418.	314053.	7972469.
##	346	15	1118	FALSE	314045.	7972418.	314083.	7972481.
##	347	15	1118	FALSE	314045.	7972418.	313973.	7972348.
##	348	15	1118	FALSE	314045.	7972418.	314201.	7972381.
##	349	15	1118	FALSE	314045.	7972418.	313995.	7972344.
##	350	15	1118	FALSE	314045.	7972418.	314407.	7972406.
##	351	15	1118	FALSE	314045.	7972418.	314045.	7972418.
##	352	15	1119	TRUE	314047.	7972417.	314050.	7972422.
##	353	15	1119	FALSE	314047.	7972417.	314036.	7972391.
##	354	15	1119	FALSE	314047.	7972417.	314044.	7972434.
##	355	15	1119	FALSE	314047.	7972417.	314043.	7972414.
##	356	15	1119	FALSE	314047.	7972417.	314048.	7972416.
##	357	15	1119	FALSE	314047.	7972417.	314049.	7972422.
##	358	15	1119	FALSE	314047.	7972417.	314037.	7972348.
##	359	15	1119	FALSE	314047.	7972417.	314077.	7972435.
##	360	15	1120	TRUE	314050.	7972422.	314047.	7972418.
##	361	15	1120	FALSE	314050.	7972422.	314086.	7972138.
##	362	15	1120	FALSE	314050.	7972422.	314027.	7972544.
##	363	15	1120	FALSE	314050.	7972422.	314064.	7972426.
##	364	15	1120	FALSE	314050.	7972422.	314047.	7972333.
##	365	15	1120	FALSE	314050.	7972422.	314083.	7972502.
##	366	15	1120	FALSE	314050.	7972422.	314005.	7972441.
##	367	15	1120	FALSE	314050.	7972422.	314722.	7972015.
##	368	15	1121	TRUE	314047.	7972418.	314046.	7972385.
##	369	15	1121	FALSE	314047.	7972418.	314089.	7972392.
##	370	15	1121	FALSE	314047.	7972418.	314043.	7972418.
##	371	15	1121	FALSE	314047.	7972418.	314158.	7972468.
##	372	15	1121	FALSE	314047.	7972418.	314049.	7972418.
##	373	15	1121	FALSE	314047.	7972418.	314582.	7972924.
##	374	15	1121	FALSE	314047.	7972418.	314052.	7972423.
##	375	15	1121	FALSE	314047.	7972418.	314045.	7972416.
##	376	15	1121	FALSE	314047.	7972418.	313959.	7972493.
##	377	15	1122	TRUE	314046.	7972385.	314048.	7972385.
##	378	15	1122	FALSE	314046.	7972385.	314080.	7972392.
##	379	15	1122	FALSE	314046.	7972385.	314300.	7972403.
##	380	15	1122	FALSE	314046.	7972385.	314046.	7972326.
##	381	15	1122	FALSE	314046.	7972385.	314051.	7972394.
##	382	15	1122	FALSE	314046.	7972385.	314028.	7972351.
##	383	15	1122	FALSE	314046.	7972385.	314109.	7972357.
##	384	15	1122	FALSE	314046.	7972385.	314046.	7972391.
##	385	15	1122	FALSE	314046.	7972385.	314046.	7972387.
##	386	15	1123	TRUE	314048.	7972385.	314052.	7972386.
##	387	15	1123	FALSE	314048.	7972385.	314078.	7972406.

##	388	15	1123	FALSE	314048.	7972385.	314118.	7972395.
##	389	15	1123	FALSE	314048.	7972385.	314035.	7972420.
##	390	15	1123	FALSE	314048.	7972385.	314011.	7972397.
##	391	15	1123	FALSE	314048.	7972385.	314001.	7972356.
##	392	15	1123	FALSE	314048.	7972385.	314186.	7972420.
##	393	15	1123	FALSE	314048.	7972385.	314083.	7972396.
##	394	15	1123	FALSE	314048.	7972385.	314048.	7972385.
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##	396	15	1124	TRUE	314052.	7972386.	314050.	7972387.
##	397	15	1124	FALSE	314052.	7972386.	314053.	7972422.
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##	401	15	1124	FALSE	314052.	7972386.	314145.	7972283.
##	402	15	1124	FALSE	314052.	7972386.	314044.	7972388.
##	403	15	1124	FALSE	314052.	7972386.	314051.	7972402.
##	404	15	1124	FALSE	314052.	7972386.	313985.	7972190.
##	405	15	1125	TRUE	314050.	7972387.	314059.	7972329.
##	406	15	1125	FALSE	314050.	7972387.	314050.	7972384.
##	407	15	1125	FALSE	314050.	7972387.	314054.	7972402.
##	408	15	1125	FALSE	314050.	7972387.	314091.	7972406.
##	409	15	1125	FALSE	314050.	7972387.	314004.	7972423.
##	410	15	1125	FALSE	314050.	7972387.	314034.	7972275.
##	411	15	1125	FALSE	314050.	7972387.	314246.	7972142.
##	412	15	1125	FALSE	314050.	7972387.	314232.	7972237.
##	413	15	1125	FALSE	314050.	7972387.	314049.	7972387.
##	414	15	1125	FALSE	314050.	7972387.	314084.	7972340.
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##	417	15	1126	FALSE	314059.	7972329.	314155.	7972385.
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##	423	15	1126	FALSE	314059.	7972329.	314061.	7972339.
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##	435	15	1128	FALSE	314076.	7972341.	314036.	7972339.
##	436	15	1128	FALSE	314076.	7972341.	314090.	7972343.
##	437	15	1128	FALSE	314076.	7972341.	314095.	7972274.
##	438	15	1128	FALSE	314076.	7972341.	314076.	7972342.
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##	442	15	1129	FALSE	314070.	7972336.	314134.	7972290.
##	443	15	1129	FALSE	314070.	7972336.	314072.	7972337.
##	444	15	1129	FALSE	314070.	7972336.	314009.	7972247.
##	445	15	1129	FALSE	314070.	7972336.	314058.	7972287.
##	446	15	1129	FALSE	314070.	7972336.	314070.	7972336.
##	447	15	1129	FALSE	314070.	7972336.	314068.	7972337.
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##	464	15	1131	FALSE	314088.	7972279.	314064.	7972321.
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##	486	15	1134	TRUE	313954.	7972615.	314158.	7972297.
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##	517	15	1137	FALSE	314209.	7972304.	314239.	7972232.
##	518	15	1137	FALSE	314209.	7972304.	314854.	7972256.
##	519	15	1137	FALSE	314209.	7972304.	314071.	7972278.
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##	523	15	1138	FALSE	314234.	7972202.	314247.	7972210.
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##	529	15	1138	FALSE	314234.	7972202.	314093.	7972252.
##	530	15	1138	FALSE	314234.	7972202.	314336.	7971810.
##	531	15	1139	TRUE	314241.	7972232.	314229.	7972295.
##	532	15	1139	FALSE	314241.	7972232.	314470.	7971988.
##	533	15	1139	FALSE	314241.	7972232.	314261.	7972245.
##	534	15	1139	FALSE	314241.	7972232.	314250.	7972181.
##	535	15	1139	FALSE	314241.	7972232.	314079.	7972277.
##	536	15	1139	FALSE	314241.	7972232.	314324.	7972307.
##	537	15	1139	FALSE	314241.	7972232.	314226.	7972466.
##	538	15	1139	FALSE	314241.	7972232.	314183.	7972403.
##	539	15	1139	FALSE	314241.	7972232.	314233.	7972241.
##	540	15	1139	FALSE	314241.	7972232.	314215.	7972222.
##	541	15	1140	TRUE	314229.	7972295.	314170.	7972180.
##	542	15	1140	FALSE	314229.	7972295.	314257.	7972398.
##	543	15	1140	FALSE	314229.	7972295.	314173.	7972229.
##	544	15	1140	FALSE	314229.	7972295.	314547.	7972235.
##	545	15	1140	FALSE	314229.	7972295.	314238.	7972218.
##	546	15	1140	FALSE	314229.	7972295.	314205.	7972244.
##	547	15	1140	FALSE	314229.	7972295.	314230.	7972308.
##	548	15	1140	FALSE	314229.	7972295.	314448.	7972007.
##	549	15	1141	TRUE	314170.	7972180.	314179.	7972152.

##	550	15	1141	FALSE	314170.	7972180.	314257.	7972170.
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##	552	15	1141	FALSE	314170.	7972180.	314170.	7972180.
##	553	15	1141	FALSE	314170.	7972180.	314212.	7972120.
##	554	15	1141	FALSE	314170.	7972180.	314044.	7972080.
##	555	15	1141	FALSE	314170.	7972180.	314160.	7972236.
##	556	15	1141	FALSE	314170.	7972180.	314145.	7972194.
##	557	15	1141	FALSE	314170.	7972180.	314214.	7972076.
##	558	15	1141	FALSE	314170.	7972180.	314137.	7972168.
##	559	15	1142	TRUE	314179.	7972152.	314222.	7972128.
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##	564	15	1142	FALSE	314179.	7972152.	314182.	7972143.
##	565	15	1142	FALSE	314179.	7972152.	314181.	7972144.
##	566	15	1142	FALSE	314179.	7972152.	314170.	7972151.
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##	571	15	1143	FALSE	314222.	7972128.	314222.	7972128.
##	572	15	1143	FALSE	314222.	7972128.	314223.	7972159.
##	573	15	1143	FALSE	314222.	7972128.	314207.	7972124.
##	574	15	1143	FALSE	314222.	7972128.	314394.	7972377.
##	575	15	1143	FALSE	314222.	7972128.	314190.	7972122.
##	576	15	1143	FALSE	314222.	7972128.	314318.	7972185.
##	577	15	1143	FALSE	314222.	7972128.	314184.	7972198.
##	578	15	1143	FALSE	314222.	7972128.	314029.	7971997.
##	579	15	1144	TRUE	314242.	7972144.	314247.	7972075.
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##	582	15	1144	FALSE	314242.	7972144.	314227.	7972140.
##	583	15	1144	FALSE	314242.	7972144.	314241.	7972143.
##	584	15	1144	FALSE	314242.	7972144.	314240.	7972154.
##	585	15	1144	FALSE	314242.	7972144.	313983.	7972133.
##	586	15	1144	FALSE	314242.	7972144.	314241.	7972144.
##	587	15	1144	FALSE	314242.	7972144.	314255.	7972177.
##	588	15	1144	FALSE	314242.	7972144.	314290.	7972119.
##	589	15	1145	TRUE	314247.	7972075.	314251.	7972068.
##	590	15	1145	FALSE	314247.	7972075.	314249.	7972100.
##	591	15	1145	FALSE	314247.	7972075.	314247.	7972075.
##	592	15	1145	FALSE	314247.	7972075.	314322.	7972018.
##	593	15	1145	FALSE	314247.	7972075.	314251.	7972078.
##	594	15	1145	FALSE	314247.	7972075.	314596.	7971801.
##	595	15	1145	FALSE	314247.	7972075.	314235.	7972059.
##	596	15	1145	FALSE	314247.	7972075.	314261.	7972068.
##	597	15	1145	FALSE	314247.	7972075.	314396.	7971667.
##	598	15	1145	FALSE	314247.	7972075.	314267.	7972089.
##	599	16	1146	TRUE	314856.	7972263.	314946.	7972117.
##	600	16	1146	FALSE	314856.	7972263.	314877.	7972233.
##	601	16	1146	FALSE	314856.	7972263.	315325.	7972440.
##	602	16	1146	FALSE	314856.	7972263.	314797.	7972149.
##	603	16	1146	FALSE	314856.	7972263.	314844.	7972275.

##	604	16	1146	FALSE	314856.	7972263.	314826.	7972421.
##	605	16	1146	FALSE	314856.	7972263.	314884.	7972263.
##	606	16	1146	FALSE	314856.	7972263.	314874.	7972205.
##	607	16	1146	FALSE	314856.	7972263.	314874.	7972256.
##	608	16	1146	FALSE	314856.	7972263.	314839.	7972266.
##	609	16	1147	TRUE	314946.	7972117.	314461.	7972322.
##	610	16	1147	FALSE	314946.	7972117.	314946.	7972117.
##	611	16	1147	FALSE	314946.	7972117.	314965.	7972026.
##	612	16	1147	FALSE	314946.	7972117.	314954.	7972139.
##	613	16	1147	FALSE	314946.	7972117.	314960.	7972101.
##	614	16	1147	FALSE	314946.	7972117.	314964.	7971942.
##	615	16	1147	FALSE	314946.	7972117.	314792.	7972252.
##	616	16	1147	FALSE	314946.	7972117.	314939.	7972103.
##	617	16	1147	FALSE	314946.	7972117.	314917.	7972200.
##	618	16	1147	FALSE	314946.	7972117.	314924.	7972087.
##	619	17	1148	TRUE	314217.	7972377.	314222.	7972388.
##	620	17	1148	FALSE	314217.	7972377.	314224.	7972349.
##	621	17	1148	FALSE	314217.	7972377.	314211.	7972370.
##	622	17	1148	FALSE	314217.	7972377.	313946.	7972293.
##	623	17	1148	FALSE	314217.	7972377.	314441.	7972278.
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##	625	17	1148	FALSE	314217.	7972377.	314192.	7972384.
##	626	17	1148	FALSE	314217.	7972377.	314216.	7972377.
##	627	17	1148	FALSE	314217.	7972377.	314261.	7972329.
##	628	17	1148	FALSE	314217.	7972377.	314215.	7972367.
##	629	17	1149	TRUE	314222.	7972388.	314221.	7972373.
##	630	17	1149	FALSE	314222.	7972388.	314286.	7971735.
##	631	17	1149	FALSE	314222.	7972388.	314122.	7972415.
##	632	17	1149	FALSE	314222.	7972388.	314127.	7972458.
##	633	17	1149	FALSE	314222.	7972388.	314192.	7972377.
##	634	17	1149	FALSE	314222.	7972388.	314614.	7972502.
##	635	17	1149	FALSE	314222.	7972388.	314214.	7972514.
##	636	17	1149	FALSE	314222.	7972388.	314229.	7972404.
##	637	17	1149	FALSE	314222.	7972388.	314223.	7972319.
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##	640	17	1150	FALSE	314221.	7972373.	314221.	7972373.
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##	642	17	1150	FALSE	314221.	7972373.	314037.	7972402.
##	643	17	1150	FALSE	314221.	7972373.	314183.	7972339.
##	644	17	1150	FALSE	314221.	7972373.	314221.	7972373.
##	645	17	1150	FALSE	314221.	7972373.	314216.	7972367.
##	646	17	1150	FALSE	314221.	7972373.	314232.	7972382.
##	647	17	1150	FALSE	314221.	7972373.	314327.	7972408.
##	648	17	1151	TRUE	314213.	7972373.	314203.	7972342.
##	649	17	1151	FALSE	314213.	7972373.	314168.	7972531.
##	650	17	1151	FALSE	314213.	7972373.	314014.	7972542.
##	651	17	1151	FALSE	314213.	7972373.	314358.	7972290.
##	652	17	1151	FALSE	314213.	7972373.	314579.	7972320.
##	653	17	1151	FALSE	314213.	7972373.	314159.	7972388.
##	654	17	1151	FALSE	314213.	7972373.	314238.	7972362.
##	655	17	1151	FALSE	314213.	7972373.	314195.	7972382.
##	656	17	1151	FALSE	314213.	7972373.	314032.	7972266.
##	657	17	1151	FALSE	314213.	7972373.	314227.	7972346.

##	658	17	1152	TRUE	314203.	7972342.	314202.	7972340.
##	659	17	1152	FALSE	314203.	7972342.	314213.	7972342.
##	660	17	1152	FALSE	314203.	7972342.	314206.	7972343.
##	661	17	1152	FALSE	314203.	7972342.	314206.	7972338.
##	662	17	1152	FALSE	314203.	7972342.	314277.	7972313.
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##	666	17	1152	FALSE	314203.	7972342.	314217.	7971542.
##	667	17	1152	FALSE	314203.	7972342.	314221.	7972323.
##	668	17	1153	TRUE	314202.	7972340.	314202.	7972339.
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##	674	17	1153	FALSE	314202.	7972340.	314218.	7972320.
##	675	17	1153	FALSE	314202.	7972340.	314194.	7972328.
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##	678	17	1154	TRUE	314202.	7972339.	314196.	7972303.
##	679	17	1154	FALSE	314202.	7972339.	314202.	7972339.
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##	681	17	1154	FALSE	314202.	7972339.	314228.	7972304.
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##	685	17	1154	FALSE	314202.	7972339.	314200.	7972338.
##	686	17	1154	FALSE	314202.	7972339.	314121.	7972541.
##	687	17	1154	FALSE	314202.	7972339.	314202.	7972339.
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##	739	17	1160	FALSE	314210.	7972275.	314207.	7972272.
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##	744	17	1160	FALSE	314210.	7972275.	314219.	7972288.
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##	757	17	1162	FALSE	314206.	7972276.	314214.	7972280.
##	758	17	1162	FALSE	314206.	7972276.	314213.	7972268.
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##	763	17	1162	FALSE	314206.	7972276.	314208.	7972275.
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##	776	17	1164	FALSE	314212.	7972283.	314212.	7972305.
##	777	17	1164	FALSE	314212.	7972283.	314177.	7972265.
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##	779	17	1164	FALSE	314212.	7972283.	314201.	7972306.
##	780	17	1164	FALSE	314212.	7972283.	314508.	7972448.
##	781	17	1164	FALSE	314212.	7972283.	314246.	7972181.
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##	787	17	1165	FALSE	314222.	7972261.	314152.	7972335.
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##	791	17	1165	FALSE	314222.	7972261.	314223.	7972261.
##	792	17	1165	FALSE	314222.	7972261.	314220.	7972261.
##	793	18	1166	TRUE	314152.	7972351.	314187.	7972284.
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## 2 2019-05-01 07:30:25 2019-05-01 08:00:47 30.36667 mins 9.25
## 3 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 26.4
## 4 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 1.18
## 5 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 46.5
## 6 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 36.1
## 7 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 1.63
## 8 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 182.
## 9 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 72.5
## 10 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 32.7
## 11 2019-05-01 08:00:47 2019-05-01 08:30:46 29.98333 mins 0.202
## 12 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 38.8
## 13 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 0.989
## 14 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 42.0
## 15 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 32.2
## 16 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 3.91
## 17 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 10.5
## 18 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 98.2
## 19 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 105.
## 20 2019-05-01 08:30:46 2019-05-01 09:00:47 30.01667 mins 20.9
## 21 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 20.3
## 22 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 83.5
## 23 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 59.0
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## 25 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 2.12
## 26 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 14.8
## 27 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 186.
## 28 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 15.5
## 29 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 171.
## 30 2019-05-01 09:00:47 2019-05-01 09:30:47 30.00000 mins 14.0
## 31 2019-05-01 09:30:47 2019-05-01 10:01:49 31.03333 mins 135.
## 32 2019-05-01 09:30:47 2019-05-01 10:01:49 31.03333 mins 28.4
## 33 2019-05-01 09:30:47 2019-05-01 10:01:49 31.03333 mins 3.18

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##	40	2019-05-01	10:01:49	2019-05-01	10:30:47	28.96667 mins	48.2
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##	42	2019-05-01	10:01:49	2019-05-01	10:30:47	28.96667 mins	1.74
##	43	2019-05-01	10:01:49	2019-05-01	10:30:47	28.96667 mins	40.8
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##	47	2019-05-01	10:30:47	2019-05-01	11:00:46	29.98333 mins	0.0605
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##	53	2019-05-01	10:30:47	2019-05-01	11:00:46	29.98333 mins	163.
##	54	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	34.6
##	55	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	328.
##	56	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	467.
##	57	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	20.4
##	58	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	178.
##	59	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	2.46
##	60	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	1.08
##	61	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	19.7
##	62	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	48.3
##	63	2019-05-01	11:00:46	2019-05-01	11:31:00	30.23333 mins	2.13
##	64	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	118.
##	65	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	63.8
##	66	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	24.6
##	67	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	32.0
##	68	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	25.5
##	69	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	4.26
##	70	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	208.
##	71	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	14.5
##	72	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	43.2
##	73	2019-05-01	13:00:46	2019-05-01	13:30:32	29.76667 mins	290.
##	74	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	154.
##	75	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	65.9
##	76	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	62.5
##	77	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	11.1
##	78	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	8.14
##	79	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	51.0
##	80	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	0.445
##	81	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	14.3
##	82	2019-05-01	13:30:32	2019-05-01	14:00:33	30.01667 mins	4.67
##	83	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	45.3
##	84	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	2.79
##	85	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	6.22
##	86	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	24.7
##	87	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	70.0

##	88	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	94.4
##	89	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	0.0898
##	90	2019-05-01	14:00:33	2019-05-01	14:32:49	32.26667 mins	382.
##	91	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	29.5
##	92	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	8.93
##	93	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	22.0
##	94	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	59.7
##	95	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	0.654
##	96	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	252.
##	97	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	67.9
##	98	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	33.9
##	99	2019-05-01	14:32:49	2019-05-01	15:00:19	27.50000 mins	49.9
##	100	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	42.1
##	101	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	67.9
##	102	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	37.6
##	103	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	3.30
##	104	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	5.42
##	105	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	592.
##	106	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	34.9
##	107	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	61.9
##	108	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	0.00510
##	109	2019-05-01	15:00:19	2019-05-01	15:30:14	29.91667 mins	19.3
##	110	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	50.2
##	111	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	2.82
##	112	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	144.
##	113	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	202.
##	114	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	146.
##	115	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	0.660
##	116	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	17.9
##	117	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	189.
##	118	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	52.4
##	119	2019-05-01	15:30:14	2019-05-01	16:00:48	30.56667 mins	7.09
##	120	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	20.2
##	121	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	8.44
##	122	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	254.
##	123	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	54.4
##	124	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	48.6
##	125	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	66.3
##	126	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	27.3
##	127	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	746.
##	128	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	17.8
##	129	2019-05-01	16:00:48	2019-05-01	16:30:47	29.98333 mins	2.07
##	130	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	8.19
##	131	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	106.
##	132	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	33.6
##	133	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	15.2
##	134	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	93.2
##	135	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	35.4
##	136	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	26.6
##	137	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	47.4
##	138	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	9.98
##	139	2019-05-01	16:30:47	2019-05-01	17:00:47	30.00000 mins	3.68
##	140	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333 mins	12.0
##	141	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333 mins	17.4

##	142	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	9.17
##	143	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	12.5
##	144	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	89.7
##	145	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	3.35
##	146	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	46.4
##	147	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	126.
##	148	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	74.4
##	149	2019-05-01	17:00:47	2019-05-01	17:30:10	29.38333	mins	0.225
##	150	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	53.7
##	151	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	185.
##	152	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	11.9
##	153	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	332.
##	154	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	413.
##	155	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	214.
##	156	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	57.7
##	157	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	4.93
##	158	2019-05-01	17:30:10	2019-05-01	18:00:47	30.61667	mins	25.1
##	159	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	31.3
##	160	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	375.
##	161	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	9.14
##	162	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	28.9
##	163	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	21.6
##	164	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	2.26
##	165	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	235.
##	166	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	65.0
##	167	2019-05-01	18:00:47	2019-05-01	18:30:29	29.70000	mins	128.
##	168	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	42.9
##	169	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	17.1
##	170	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	178.
##	171	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	79.4
##	172	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	6.95
##	173	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	86.7
##	174	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	3.83
##	175	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	118.
##	176	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	26.6
##	177	2019-05-01	18:30:29	2019-05-01	19:00:14	29.75000	mins	114.
##	178	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	69.1
##	179	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	57.8
##	180	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	79.8
##	181	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	27.9
##	182	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	140.
##	183	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	97.5
##	184	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	255.
##	185	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	79.3
##	186	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	20.1
##	187	2019-05-01	19:00:14	2019-05-01	19:30:11	29.95000	mins	3.06
##	188	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	181.
##	189	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	134.
##	190	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	146.
##	191	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	23.7
##	192	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	29.9
##	193	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	57.8
##	194	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	28.6
##	195	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	441.

##	196	2019-05-01	19:30:11	2019-05-01	20:00:47	30.60000	mins	16.9
##	197	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	159.
##	198	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	47.9
##	199	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	7.62
##	200	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	34.4
##	201	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	102.
##	202	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	180.
##	203	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	54.2
##	204	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	159.
##	205	2019-05-01	20:00:47	2019-05-01	20:31:01	30.23333	mins	38.4
##	206	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	25.0
##	207	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	0.00809
##	208	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	1.46
##	209	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	116.
##	210	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	2.28
##	211	2019-05-01	20:31:01	2019-05-01	21:00:47	29.76667	mins	17.0
##	212	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	72.5
##	213	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	95.4
##	214	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	17.2
##	215	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	39.7
##	216	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	22.5
##	217	2019-05-01	21:00:47	2019-05-01	21:31:55	31.13333	mins	83.0
##	218	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	12.4
##	219	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	83.7
##	220	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	39.1
##	221	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	44.9
##	222	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	3.40
##	223	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	16.4
##	224	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	34.1
##	225	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	92.3
##	226	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	48.2
##	227	2019-05-01	21:31:55	2019-05-01	22:00:10	28.25000	mins	0.0397
##	228	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	25.8
##	229	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	415.
##	230	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	42.9
##	231	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	3.91
##	232	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	14.9
##	233	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	22.5
##	234	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	11.3
##	235	2019-05-01	22:00:10	2019-05-01	22:30:06	29.93333	mins	2.88
##	236	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	38.1
##	237	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	0.0433
##	238	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	0.775
##	239	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	18.2
##	240	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	29.9
##	241	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	52.7
##	242	2019-05-01	22:30:06	2019-05-01	23:00:47	30.68333	mins	205.
##	243	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	3.29
##	244	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	95.3
##	245	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	3.75
##	246	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	13.2
##	247	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	27.2
##	248	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	56.9
##	249	2019-05-01	23:00:47	2019-05-01	23:30:48	30.01667	mins	112.

##	250	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	52.3
##	251	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	0.0142
##	252	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	7.15
##	253	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	26.8
##	254	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	122.
##	255	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	45.5
##	256	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	118.
##	257	2019-05-01	23:30:48	2019-05-02	00:00:47	29.98333	mins	74.2
##	258	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	62.6
##	259	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	147.
##	260	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	55.6
##	261	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	147.
##	262	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	1.13
##	263	2019-05-02	00:00:47	2019-05-02	00:30:41	29.90000	mins	2.58
##	264	2019-05-02	00:30:41	2019-05-02	01:00:46	30.08333	mins	46.9
##	265	2019-05-02	00:30:41	2019-05-02	01:00:46	30.08333	mins	81.0
##	266	2019-05-02	00:30:41	2019-05-02	01:00:46	30.08333	mins	53.8
##	267	2019-05-02	00:30:41	2019-05-02	01:00:46	30.08333	mins	44.4
##	268	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	5.16
##	269	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	12.6
##	270	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	0.498
##	271	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	125.
##	272	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	114.
##	273	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	38.9
##	274	2019-05-02	01:00:46	2019-05-02	01:30:47	30.01667	mins	6.65
##	275	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	104.
##	276	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	84.5
##	277	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	227.
##	278	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	156.
##	279	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	0.540
##	280	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	59.2
##	281	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	22.4
##	282	2019-05-02	01:30:47	2019-05-02	02:00:46	29.98333	mins	44.7
##	283	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	60.0
##	284	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	51.2
##	285	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	0.639
##	286	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	0.0647
##	287	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	2.15
##	288	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	28.0
##	289	2019-05-02	02:00:46	2019-05-02	02:30:34	29.80000	mins	1.42
##	290	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	2.22
##	291	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	49.6
##	292	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	4.38
##	293	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	184.
##	294	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	22.3
##	295	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	95.1
##	296	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	556.
##	297	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	87.4
##	298	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	338.
##	299	2019-05-02	02:30:34	2019-05-02	03:00:12	29.63333	mins	1.23
##	300	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	69.6
##	301	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	12.6
##	302	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	4.74
##	303	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	42.3

##	304	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	7.02
##	305	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	96.0
##	306	2019-05-02	03:00:12	2019-05-02	03:30:47	30.58333	mins	309.
##	307	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	1.61
##	308	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	0.586
##	309	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	20.1
##	310	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	16.0
##	311	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	298.
##	312	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	20.7
##	313	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	1.62
##	314	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	133.
##	315	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	46.0
##	316	2019-05-02	03:30:47	2019-05-02	04:00:36	29.81667	mins	0.306
##	317	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	1.61
##	318	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	123.
##	319	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	22.2
##	320	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	7.93
##	321	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	35.2
##	322	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	157.
##	323	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	1.36
##	324	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	10.3
##	325	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	1.03
##	326	2019-05-02	04:00:36	2019-05-02	04:30:17	29.68333	mins	68.8
##	327	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	1.68
##	328	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	9.66
##	329	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	28.1
##	330	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	1.74
##	331	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	133.
##	332	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	66.1
##	333	2019-05-02	04:30:17	2019-05-02	05:00:27	30.16667	mins	42.4
##	334	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	0.000904
##	335	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	9.82
##	336	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	210.
##	337	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	106.
##	338	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	49.9
##	339	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	1.63
##	340	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	153.
##	341	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	102.
##	342	2019-05-02	05:00:27	2019-05-02	05:30:47	30.33333	mins	147.
##	343	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	2.63
##	344	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	83.2
##	345	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	51.2
##	346	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	73.5
##	347	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	100.
##	348	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	160.
##	349	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	89.4
##	350	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	363.
##	351	2019-05-02	05:30:47	2019-05-02	06:00:46	29.98333	mins	0.545
##	352	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	5.25
##	353	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	27.9
##	354	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	17.5
##	355	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	5.66
##	356	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	1.56
##	357	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	5.47

##	358	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	69.7
##	359	2019-05-02	06:00:46	2019-05-02	06:30:47	30.01667	mins	35.0
##	360	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	4.18
##	361	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	286.
##	362	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	124.
##	363	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	14.6
##	364	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	88.7
##	365	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	87.5
##	366	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	48.1
##	367	2019-05-02	06:30:47	2019-05-02	07:00:36	29.81667	mins	786.
##	368	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	33.3
##	369	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	49.4
##	370	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	4.76
##	371	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	121.
##	372	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	1.28
##	373	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	736.
##	374	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	6.69
##	375	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	3.39
##	376	2019-05-02	07:00:36	2019-05-02	07:30:08	29.53333	mins	116.
##	377	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	1.16
##	378	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	34.1
##	379	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	254.
##	380	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	59.1
##	381	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	10.2
##	382	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	38.2
##	383	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	68.8
##	384	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	6.56
##	385	2019-05-02	07:30:08	2019-05-02	08:00:41	30.55000	mins	2.43
##	386	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	4.71
##	387	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	36.9
##	388	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	70.9
##	389	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	37.8
##	390	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	38.9
##	391	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	54.9
##	392	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	143.
##	393	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	36.7
##	394	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	0.589
##	395	2019-05-02	08:00:41	2019-05-02	08:30:14	29.55000	mins	17.6
##	396	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	2.63
##	397	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	36.4
##	398	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	55.6
##	399	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	15.8
##	400	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	26.8
##	401	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	139.
##	402	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	8.58
##	403	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	15.6
##	404	2019-05-02	08:30:14	2019-05-02	09:00:13	29.98333	mins	207.
##	405	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	58.9
##	406	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	3.43
##	407	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	15.7
##	408	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	45.7
##	409	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	58.0
##	410	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	113.
##	411	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	314.

##	412	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	236.
##	413	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	1.14
##	414	2019-05-02	09:00:13	2019-05-02	09:30:46	30.55000	mins	58.2
##	415	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	27.8
##	416	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	194.
##	417	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	110.
##	418	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	2.30
##	419	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	18.7
##	420	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	87.9
##	421	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	33.9
##	422	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	9.81
##	423	2019-05-02	09:30:46	2019-05-02	10:00:55	30.15000	mins	10.5
##	424	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	9.38
##	425	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	523.
##	426	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	368.
##	427	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	13.4
##	428	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	125.
##	429	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	39.2
##	430	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	10.3
##	431	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	5.62
##	432	2019-05-02	10:00:55	2019-05-02	10:30:47	29.86667	mins	13.2
##	433	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	8.21
##	434	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	42.0
##	435	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	40.5
##	436	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	13.5
##	437	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	69.3
##	438	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	1.34
##	439	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	39.0
##	440	2019-05-02	10:30:47	2019-05-02	11:00:46	29.98333	mins	1.44
##	441	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	44.3
##	442	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	79.1
##	443	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	1.97
##	444	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	108.
##	445	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	50.3
##	446	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	0.127
##	447	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	1.53
##	448	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	26.5
##	449	2019-05-02	11:00:46	2019-05-02	11:30:46	30.00000	mins	113.
##	450	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	45.0
##	451	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	503.
##	452	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	66.2
##	453	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	23.4
##	454	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	1.35
##	455	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	26.7
##	456	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	94.4
##	457	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	78.2
##	458	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	32.4
##	459	2019-05-02	11:30:46	2019-05-02	12:00:46	30.00000	mins	17.4
##	460	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	3.21
##	461	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	18.8
##	462	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	14.7
##	463	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	0.592
##	464	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	48.0
##	465	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	141.

##	466	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	0.0437
##	467	2019-05-02	12:00:46	2019-05-02	12:31:06	30.33333	mins	16.2
##	468	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	111.
##	469	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	195.
##	470	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	23.7
##	471	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	121.
##	472	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	63.4
##	473	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	13.9
##	474	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	52.3
##	475	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	63.4
##	476	2019-05-02	12:31:06	2019-05-02	13:00:46	29.66667	mins	11.9
##	477	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	380.
##	478	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	29.1
##	479	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	17.0
##	480	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	1067.
##	481	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	1.89
##	482	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	26.0
##	483	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	0.000130
##	484	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	37.5
##	485	2019-05-02	13:00:46	2019-05-02	13:30:47	30.01667	mins	10.2
##	486	2019-05-02	13:30:47	2019-05-02	14:00:46	29.98333	mins	379.
##	487	2019-05-02	13:30:47	2019-05-02	14:00:46	29.98333	mins	98.2
##	488	2019-05-02	13:30:47	2019-05-02	14:00:46	29.98333	mins	23.1
##	489	2019-05-02	13:30:47	2019-05-02	14:00:46	29.98333	mins	1.12
##	490	2019-05-02	13:30:47	2019-05-02	14:00:46	29.98333	mins	28.9
##	491	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	63.5
##	492	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	236.
##	493	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	0.00376
##	494	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	108.
##	495	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	1.54
##	496	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	45.8
##	497	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	12.5
##	498	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	4.66
##	499	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	65.6
##	500	2019-05-02	14:00:46	2019-05-02	14:31:25	30.65000	mins	151.
##	501	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	15.0
##	502	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	180.
##	503	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	142.
##	504	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	30.6
##	505	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	0.757
##	506	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	9.46
##	507	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	0.00984
##	508	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	3.42
##	509	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	163.
##	510	2019-05-02	14:31:25	2019-05-02	15:00:47	29.36667	mins	92.8
##	511	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	105.
##	512	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	103.
##	513	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	10.8
##	514	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	78.8
##	515	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	3.78
##	516	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	67.2
##	517	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	78.1
##	518	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	646.
##	519	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	140.

##	520	2019-05-02	15:00:47	2019-05-02	15:30:33	29.76667	mins	41.7
##	521	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	30.6
##	522	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	93.2
##	523	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	14.4
##	524	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	6.28
##	525	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	337.
##	526	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	26.9
##	527	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	49.1
##	528	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	0.389
##	529	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	149.
##	530	2019-05-02	15:30:33	2019-05-02	16:00:49	30.26667	mins	406.
##	531	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	63.9
##	532	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	335.
##	533	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	23.7
##	534	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	52.2
##	535	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	168.
##	536	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	112.
##	537	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	234.
##	538	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	180.
##	539	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	11.3
##	540	2019-05-02	16:00:49	2019-05-02	16:30:46	29.95000	mins	27.2
##	541	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	129.
##	542	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	107.
##	543	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	86.8
##	544	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	323.
##	545	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	77.6
##	546	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	56.3
##	547	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	13.4
##	548	2019-05-02	16:30:46	2019-05-02	17:00:49	30.05000	mins	362.
##	549	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	29.9
##	550	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	88.2
##	551	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	99.1
##	552	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	0.114
##	553	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	73.3
##	554	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	161.
##	555	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	55.9
##	556	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	28.8
##	557	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	113.
##	558	2019-05-02	17:00:49	2019-05-02	17:30:45	29.93333	mins	35.4
##	559	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	49.7
##	560	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	303.
##	561	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	69.6
##	562	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	4.46
##	563	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	39.4
##	564	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	9.72
##	565	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	8.62
##	566	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	9.14
##	567	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	3.91
##	568	2019-05-02	17:30:45	2019-05-02	18:00:16	29.51667	mins	76.9
##	569	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	25.5
##	570	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	284.
##	571	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	0.0988
##	572	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	31.0
##	573	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	15.4

##	574	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	303.
##	575	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	32.8
##	576	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	112.
##	577	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	80.7
##	578	2019-05-02	18:00:16	2019-05-02	18:30:21	30.08333	mins	234.
##	579	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	69.1
##	580	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	113.
##	581	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	15.1
##	582	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	14.8
##	583	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	1.27
##	584	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	9.77
##	585	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	259.
##	586	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	0.375
##	587	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	35.7
##	588	2019-05-02	18:30:21	2019-05-02	19:00:19	29.96667	mins	54.6
##	589	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	8.42
##	590	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	24.4
##	591	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	0.418
##	592	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	94.5
##	593	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	4.72
##	594	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	445.
##	595	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	20.8
##	596	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	15.7
##	597	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	435.
##	598	2019-05-02	19:00:19	2019-05-02	19:30:35	30.26667	mins	24.7
##	599	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	172.
##	600	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	36.4
##	601	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	501.
##	602	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	129.
##	603	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	17.3
##	604	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	160.
##	605	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	27.2
##	606	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	61.0
##	607	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	19.2
##	608	2019-05-02	22:01:19	2019-05-02	22:30:47	29.46667	mins	17.7
##	609	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	527.
##	610	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	0.00557
##	611	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	92.7
##	612	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	24.0
##	613	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	21.2
##	614	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	175.
##	615	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	205.
##	616	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	15.6
##	617	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	88.1
##	618	2019-05-02	22:30:47	2019-05-02	23:00:46	29.98333	mins	37.1
##	619	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	12.1
##	620	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	29.0
##	621	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	9.45
##	622	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	283.
##	623	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	245.
##	624	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	83.2
##	625	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	25.8
##	626	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	0.378
##	627	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	65.4

##	628	2019-05-03	00:30:47	2019-05-03	01:01:26	30.65000	mins	9.91
##	629	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	14.3
##	630	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	656.
##	631	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	104.
##	632	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	119.
##	633	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	31.5
##	634	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	408.
##	635	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	127.
##	636	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	17.8
##	637	2019-05-03	01:01:26	2019-05-03	01:30:45	29.31667	mins	68.2
##	638	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	7.93
##	639	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	1.27
##	640	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	0.0792
##	641	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	80.2
##	642	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	186.
##	643	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	51.1
##	644	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	0.785
##	645	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	8.48
##	646	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	13.3
##	647	2019-05-03	01:30:45	2019-05-03	02:00:46	30.01667	mins	111.
##	648	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	32.5
##	649	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	164.
##	650	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	261.
##	651	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	167.
##	652	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	369.
##	653	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	56.6
##	654	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	26.8
##	655	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	20.4
##	656	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	211.
##	657	2019-05-03	02:00:46	2019-05-03	02:30:17	29.51667	mins	30.6
##	658	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	2.60
##	659	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	9.45
##	660	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	2.91
##	661	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	5.17
##	662	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	79.1
##	663	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	482.
##	664	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	22.3
##	665	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	13.2
##	666	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	800.
##	667	2019-05-03	02:30:17	2019-05-03	03:00:31	30.23333	mins	25.7
##	668	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	1.22
##	669	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	5.34
##	670	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	36.9
##	671	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	0.533
##	672	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	122.
##	673	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	30.5
##	674	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	25.2
##	675	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	14.0
##	676	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	0.727
##	677	2019-05-03	03:00:31	2019-05-03	03:30:17	29.76667	mins	9.98
##	678	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	36.3
##	679	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	0.145
##	680	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	113.
##	681	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	43.1

##	682	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	32.0
##	683	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	193.
##	684	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	4.03
##	685	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	2.54
##	686	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	218.
##	687	2019-05-03	03:30:17	2019-05-03	04:00:09	29.86667	mins	0.0191
##	688	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	5.68
##	689	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	171.
##	690	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	79.0
##	691	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	5.06
##	692	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	1.04
##	693	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	43.5
##	694	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	2.39
##	695	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	112.
##	696	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	0.415
##	697	2019-05-03	04:00:09	2019-05-03	04:30:21	30.20000	mins	27.9
##	698	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	4.60
##	699	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	157.
##	700	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	38.7
##	701	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	40.9
##	702	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	193.
##	703	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	236.
##	704	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	20.1
##	705	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	37.2
##	706	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	26.4
##	707	2019-05-03	04:30:21	2019-05-03	05:00:11	29.83333	mins	7.90
##	708	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	10.5
##	709	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	0.0277
##	710	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	104.
##	711	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	107.
##	712	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	0.215
##	713	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	35.9
##	714	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	621.
##	715	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	6.11
##	716	2019-05-03	05:00:11	2019-05-03	05:30:47	30.60000	mins	32.4
##	717	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	4.55
##	718	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	87.7
##	719	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	28.3
##	720	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	34.6
##	721	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	1.44
##	722	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	91.9
##	723	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	33.0
##	724	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	154.
##	725	2019-05-03	05:30:47	2019-05-03	06:01:31	30.73333	mins	1.02
##	726	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	25.0
##	727	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	75.3
##	728	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	7.50
##	729	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	187.
##	730	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	18.7
##	731	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	45.6
##	732	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	179.
##	733	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	45.6
##	734	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	71.6
##	735	2019-05-03	06:01:31	2019-05-03	06:30:49	29.30000	mins	90.3

##	736	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	4.90
##	737	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	93.7
##	738	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	0.561
##	739	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	3.42
##	740	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	0.0938
##	741	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	88.0
##	742	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	27.4
##	743	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	23.5
##	744	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	16.6
##	745	2019-05-03	06:30:49	2019-05-03	07:00:46	29.95000	mins	92.5
##	746	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	2.32
##	747	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	275.
##	748	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	32.0
##	749	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	50.0
##	750	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	6.38
##	751	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	187.
##	752	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	88.0
##	753	2019-05-03	07:00:46	2019-05-03	07:30:18	29.53333	mins	0.712
##	754	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	5.76
##	755	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	50.7
##	756	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	130.
##	757	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	8.33
##	758	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	10.7
##	759	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	83.1
##	760	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	187.
##	761	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	13.0
##	762	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	210.
##	763	2019-05-03	07:30:18	2019-05-03	08:00:16	29.96667	mins	2.07
##	764	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	3.73
##	765	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	98.9
##	766	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	7.93
##	767	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	1.38
##	768	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	6.08
##	769	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	231.
##	770	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	239.
##	771	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	1.06
##	772	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	146.
##	773	2019-05-03	08:00:16	2019-05-03	08:30:17	30.01667	mins	20.8
##	774	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	24.8
##	775	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	44.1
##	776	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	22.2
##	777	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	39.1
##	778	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	227.
##	779	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	25.4
##	780	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	339.
##	781	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	108.
##	782	2019-05-03	08:30:17	2019-05-03	09:00:18	30.01667	mins	0.236
##	783	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	38.1
##	784	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	209.
##	785	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	224.
##	786	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	60.2
##	787	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	103.
##	788	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	2.48
##	789	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	69.4

##	790	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	376.
##	791	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	0.632
##	792	2019-05-03	09:00:18	2019-05-03	09:30:33	30.25000	mins	1.91
##	793	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	75.7
##	794	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	1.39
##	795	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	92.1
##	796	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	9.41
##	797	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	436.
##	798	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	141.
##	799	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	55.9
##	800	2019-05-03	11:00:46	2019-05-03	11:30:46	30.00000	mins	69.0
##	801	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	150.
##	802	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	1.37
##	803	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	144.
##	804	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	238.
##	805	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	279.
##	806	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	139.
##	807	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	145.
##	808	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	70.2
##	809	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	16.8
##	810	2019-05-03	11:30:46	2019-05-03	12:00:47	30.01667	mins	22.6
##	811	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	36.4
##	812	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	171.
##	813	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	83.7
##	814	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	937.
##	815	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	3.95
##	816	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	22.1
##	817	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	18.8
##	818	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	78.2
##	819	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	0.308
##	820	2019-05-03	12:00:47	2019-05-03	12:31:59	31.20000	mins	1.31
##	821	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	11.6
##	822	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	63.9
##	823	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	13.4
##	824	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	2.61
##	825	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	17.3
##	826	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	94.3
##	827	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	92.9
##	828	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	26.3
##	829	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	139.
##	830	2019-05-03	12:31:59	2019-05-03	13:00:47	28.80000	mins	32.3
##	831	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	24.7
##	832	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	69.0
##	833	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	1.53
##	834	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	122.
##	835	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	134.
##	836	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	59.1
##	837	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	15.0
##	838	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	215.
##	839	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	139.
##	840	2019-05-03	13:00:47	2019-05-03	13:30:47	30.00000	mins	2.10
##	841	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	17.6
##	842	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	143.
##	843	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	74.9

##	844	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	33.9
##	845	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	43.8
##	846	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	53.7
##	847	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	129.
##	848	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	110.
##	849	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	199.
##	850	2019-05-03	13:30:47	2019-05-03	14:00:46	29.98333	mins	4.22
##	851	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	24.1
##	852	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	12.2
##	853	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	7.00
##	854	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	220.
##	855	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	285.
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##	860	2019-05-03	14:00:46	2019-05-03	14:31:18	30.53333	mins	16.1
##	861	2019-05-03	14:31:18	2019-05-03	15:00:12	28.90000	mins	59.0
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##	865	2019-05-03	14:31:18	2019-05-03	15:00:12	28.90000	mins	35.6
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##	869	2019-05-03	14:31:18	2019-05-03	15:00:12	28.90000	mins	429.
##	870	2019-05-03	14:31:18	2019-05-03	15:00:12	28.90000	mins	1.36
##	871	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	53.8
##	872	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	0.0581
##	873	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	22.7
##	874	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	19.1
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##	878	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	77.3
##	879	2019-05-03	15:00:12	2019-05-03	15:30:46	30.56667	mins	39.7
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##	886	2019-05-03	15:30:46	2019-05-03	16:01:00	30.23333	mins	212.
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##	897	2019-05-03	16:01:00	2019-05-03	16:30:07	29.11667	mins	144.

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##	911	2019-05-03	17:00:08	2019-05-03	17:30:07	29.98333	mins	100.
##	912	2019-05-03	17:00:08	2019-05-03	17:30:07	29.98333	mins	349.
##	913	2019-05-03	17:00:08	2019-05-03	17:30:07	29.98333	mins	24.4
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##	951	2019-05-03	19:00:17	2019-05-03	19:30:34	30.28333	mins	81.4

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## 952 2019-05-03 19:00:17 2019-05-03 19:30:34 30.28333 mins 114.
## 953 2019-05-03 19:00:17 2019-05-03 19:30:34 30.28333 mins 529.
## 954 2019-05-03 19:00:17 2019-05-03 19:30:34 30.28333 mins 0.569
## 955 2019-05-03 19:00:17 2019-05-03 19:30:34 30.28333 mins 44.1
## 956 2019-05-05 16:00:47 2019-05-05 16:30:35 29.80000 mins 545.
## 957 2019-05-05 16:00:47 2019-05-05 16:30:35 29.80000 mins 61.0
## 958 2019-05-05 16:00:47 2019-05-05 16:30:35 29.80000 mins 210.
## 959 2019-05-05 16:00:47 2019-05-05 16:30:35 29.80000 mins 162.
## 960 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 12.8
## 961 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 19.9
## 962 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 262.
## 963 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 21.3
## 964 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 14.0
## 965 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 12.7
## 966 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 0.618
## 967 2019-05-05 16:30:35 2019-05-05 17:00:26 29.85000 mins 6.52
## 968 2019-05-05 17:00:26 2019-05-05 17:30:18 29.86667 mins 1091.
## 969 2019-05-05 19:00:47 2019-05-05 19:30:46 29.98333 mins 78.1
## 970 2019-05-05 22:02:06 2019-05-05 22:30:32 28.43333 mins 952.
## 971 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 775.
## 972 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 204.
## 973 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 39.2
## 974 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 505.
## 975 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 131.
## 976 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 41.1
## 977 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 181.
## 978 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 516.
## 979 2019-05-05 22:30:32 2019-05-05 23:00:09 29.61667 mins 1.83
## 980 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 833.
## 981 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 0.546
## 982 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 96.2
## 983 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 204.
## 984 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 337.
## 985 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 444.
## 986 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 77.7
## 987 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 46.3
## 988 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 7.94
## 989 2019-05-05 23:00:09 2019-05-05 23:30:32 30.38333 mins 25.4
## 990 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 171.
## 991 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 31.1
## 992 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 0.00755
## 993 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 6.68
## 994 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 44.9
## 995 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 14.1
## 996 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 0.887
## 997 2019-05-05 23:30:32 2019-05-06 00:00:08 29.60000 mins 534.
## 998 2019-05-06 00:00:08 2019-05-06 00:30:13 30.08333 mins 1300.
## 999 2019-05-06 00:00:08 2019-05-06 00:30:13 30.08333 mins 0.987
## 1000 2019-05-06 00:00:08 2019-05-06 00:30:13 30.08333 mins 66.1
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##      2 -0.948           6      18081 Milho - Safrinha 2019-07-04
##      3 -1.61            6      18081 Milho - Safrinha 2019-07-04

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##	4	-0.344	6	18081 Milho - Safrinha	2019-07-04
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##	6	-1.85	6	18081 Milho - Safrinha	2019-07-04
##	7	-1.08	6	18081 Milho - Safrinha	2019-07-04
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##	13	-2.63	6	18081 Milho - Safrinha	2019-07-04
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##	22	0.976	6	18081 Milho - Safrinha	2019-07-04
##	23	2.21	6	18081 Milho - Safrinha	2019-07-04
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##	25	-2.22	6	18081 Milho - Safrinha	2019-07-04
##	26	2.58	6	18081 Milho - Safrinha	2019-07-04
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##	108	1.23	6	18081 Milho - Safrinha	2019-07-04
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##	116	-2.30	6	18081 Milho - Safrinha	2019-07-04
##	117	1.21	6	18081 Milho - Safrinha	2019-07-04
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##	379	1.67	6	18081 Milho - Safrinha	2019-07-04
##	380	0.0184	6	18081 Milho - Safrinha	2019-07-04
##	381	2.73	6	18081 Milho - Safrinha	2019-07-04

##	382	-0.485	6	18081 Milho - Safrinha	2019-07-04
##	383	1.18	6	18081 Milho - Safrinha	2019-07-04
##	384	-3.09	6	18081 Milho - Safrinha	2019-07-04
##	385	-2.79	6	18081 Milho - Safrinha	2019-07-04
##	386	0.262	6	18081 Milho - Safrinha	2019-07-04
##	387	0.620	6	18081 Milho - Safrinha	2019-07-04
##	388	0.137	6	18081 Milho - Safrinha	2019-07-04
##	389	1.91	6	18081 Milho - Safrinha	2019-07-04
##	390	2.80	6	18081 Milho - Safrinha	2019-07-04
##	391	-2.60	6	18081 Milho - Safrinha	2019-07-04
##	392	0.238	6	18081 Milho - Safrinha	2019-07-04
##	393	0.303	6	18081 Milho - Safrinha	2019-07-04
##	394	1.72	6	18081 Milho - Safrinha	2019-07-04
##	395	-0.546	6	18081 Milho - Safrinha	2019-07-04
##	396	2.40	6	18081 Milho - Safrinha	2019-07-04
##	397	1.27	6	18081 Milho - Safrinha	2019-07-04
##	398	0.527	6	18081 Milho - Safrinha	2019-07-04
##	399	-2.25	6	18081 Milho - Safrinha	2019-07-04
##	400	1.28	6	18081 Milho - Safrinha	2019-07-04
##	401	-1.11	6	18081 Milho - Safrinha	2019-07-04
##	402	2.60	6	18081 Milho - Safrinha	2019-07-04
##	403	1.38	6	18081 Milho - Safrinha	2019-07-04
##	404	-2.17	6	18081 Milho - Safrinha	2019-07-04
##	405	2.21	6	18081 Milho - Safrinha	2019-07-04
##	406	2.11	6	18081 Milho - Safrinha	2019-07-04
##	407	-1.38	6	18081 Milho - Safrinha	2019-07-04
##	408	-2.23	6	18081 Milho - Safrinha	2019-07-04
##	409	-0.194	6	18081 Milho - Safrinha	2019-07-04
##	410	1.90	6	18081 Milho - Safrinha	2019-07-04
##	411	2.72	6	18081 Milho - Safrinha	2019-07-04
##	412	2.93	6	18081 Milho - Safrinha	2019-07-04
##	413	0.444	6	18081 Milho - Safrinha	2019-07-04
##	414	2.67	6	18081 Milho - Safrinha	2019-07-04
##	415	1.77	6	18081 Milho - Safrinha	2019-07-04
##	416	1.82	6	18081 Milho - Safrinha	2019-07-04
##	417	1.93	6	18081 Milho - Safrinha	2019-07-04
##	418	2.28	6	18081 Milho - Safrinha	2019-07-04
##	419	-0.791	6	18081 Milho - Safrinha	2019-07-04
##	420	-1.45	6	18081 Milho - Safrinha	2019-07-04
##	421	-0.105	6	18081 Milho - Safrinha	2019-07-04
##	422	0.354	6	18081 Milho - Safrinha	2019-07-04
##	423	2.82	6	18081 Milho - Safrinha	2019-07-04
##	424	2.54	6	18081 Milho - Safrinha	2019-07-04
##	425	-0.481	6	18065 Milho - Safrinha	2019-06-18
##	426	-2.12	6	18081 Milho - Safrinha	2019-07-04
##	427	1.49	6	18081 Milho - Safrinha	2019-07-04
##	428	-1.17	6	18081 Milho - Safrinha	2019-07-04
##	429	-0.479	6	18081 Milho - Safrinha	2019-07-04
##	430	1.62	6	18081 Milho - Safrinha	2019-07-04
##	431	-2.61	6	18081 Milho - Safrinha	2019-07-04
##	432	0.308	6	18081 Milho - Safrinha	2019-07-04
##	433	0.852	6	18081 Milho - Safrinha	2019-07-04
##	434	0.522	6	18081 Milho - Safrinha	2019-07-04
##	435	0.300	6	18081 Milho - Safrinha	2019-07-04

##	436	-2.78	6	18081	Milho	-	Safrinha	2019-07-04
##	437	2.08	6	18081	Milho	-	Safrinha	2019-07-04
##	438	-0.794	6	18081	Milho	-	Safrinha	2019-07-04
##	439	0.0233	6	18081	Milho	-	Safrinha	2019-07-04
##	440	-0.762	6	18081	Milho	-	Safrinha	2019-07-04
##	441	0.431	6	18081	Milho	-	Safrinha	2019-07-04
##	442	1.91	6	18081	Milho	-	Safrinha	2019-07-04
##	443	2.81	6	18081	Milho	-	Safrinha	2019-07-04
##	444	0.358	6	18081	Milho	-	Safrinha	2019-07-04
##	445	0.716	6	18081	Milho	-	Safrinha	2019-07-04
##	446	0.916	6	18081	Milho	-	Safrinha	2019-07-04
##	447	-0.999	6	18081	Milho	-	Safrinha	2019-07-04
##	448	1.00	6	18081	Milho	-	Safrinha	2019-07-04
##	449	-0.110	6	18081	Milho	-	Safrinha	2019-07-04
##	450	1.67	6	18081	Milho	-	Safrinha	2019-07-04
##	451	1.10	6	18072	Milho	-	Safrinha	2019-06-25
##	452	0.135	6	18081	Milho	-	Safrinha	2019-07-04
##	453	-0.626	6	18081	Milho	-	Safrinha	2019-07-04
##	454	-0.377	6	18081	Milho	-	Safrinha	2019-07-04
##	455	0.728	6	18081	Milho	-	Safrinha	2019-07-04
##	456	2.51	6	18081	Milho	-	Safrinha	2019-07-04
##	457	2.22	6	18081	Milho	-	Safrinha	2019-07-04
##	458	1.39	6	18081	Milho	-	Safrinha	2019-07-04
##	459	-1.60	6	18081	Milho	-	Safrinha	2019-07-04
##	460	2.77	6	18081	Milho	-	Safrinha	2019-07-04
##	461	-0.103	6	18081	Milho	-	Safrinha	2019-07-04
##	462	-0.207	6	18081	Milho	-	Safrinha	2019-07-04
##	463	-1.06	6	18081	Milho	-	Safrinha	2019-07-04
##	464	2.54	6	18081	Milho	-	Safrinha	2019-07-04
##	465	-2.72	6	18081	Milho	-	Safrinha	2019-07-04
##	466	2.13	6	18081	Milho	-	Safrinha	2019-07-04
##	467	-0.232	6	18081	Milho	-	Safrinha	2019-07-04
##	468	1.21	6	18081	Milho	-	Safrinha	2019-07-04
##	469	2.21	6	18081	Milho	-	Safrinha	2019-07-04
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##	471	-1.05	6	18081	Milho	-	Safrinha	2019-07-04
##	472	-0.157	6	18081	Milho	-	Safrinha	2019-07-04
##	473	-2.75	6	18081	Milho	-	Safrinha	2019-07-04
##	474	-0.184	6	18081	Milho	-	Safrinha	2019-07-04
##	475	2.41	6	18081	Milho	-	Safrinha	2019-07-04
##	476	-0.345	6	18081	Milho	-	Safrinha	2019-07-04
##	477	-1.91	6	18081	Milho	-	Safrinha	2019-07-04
##	478	0.0653	6	18081	Milho	-	Safrinha	2019-07-04
##	479	0.762	6	18081	Milho	-	Safrinha	2019-07-04
##	480	2.35	6	18072	Milho	-	Safrinha	2019-06-25
##	481	-1.54	6	18081	Milho	-	Safrinha	2019-07-04
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##	483	-0.728	6	18081	Milho	-	Safrinha	2019-07-04
##	484	1.02	6	18081	Milho	-	Safrinha	2019-07-04
##	485	-0.219	6	18081	Milho	-	Safrinha	2019-07-04
##	486	-2.65	6	18081	Milho	-	Safrinha	2019-07-04
##	487	-1.75	6	18081	Milho	-	Safrinha	2019-07-04
##	488	0.0347	6	18081	Milho	-	Safrinha	2019-07-04
##	489	-0.789	6	18081	Milho	-	Safrinha	2019-07-04

##	490	0.361	6	18081 Milho - Safrinha	2019-07-04
##	491	0.990	6	18081 Milho - Safrinha	2019-07-04
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##	493	-2.71	6	18081 Milho - Safrinha	2019-07-04
##	494	1.79	6	18081 Milho - Safrinha	2019-07-04
##	495	1.81	6	18081 Milho - Safrinha	2019-07-04
##	496	-2.21	6	18081 Milho - Safrinha	2019-07-04
##	497	-0.0641	6	18081 Milho - Safrinha	2019-07-04
##	498	1.24	6	18081 Milho - Safrinha	2019-07-04
##	499	-1.08	6	18081 Milho - Safrinha	2019-07-04
##	500	-0.634	6	18081 Milho - Safrinha	2019-07-04
##	501	2.57	6	18081 Milho - Safrinha	2019-07-04
##	502	-0.370	6	18065 Milho - Safrinha	2019-06-18
##	503	0.913	6	18081 Milho - Safrinha	2019-07-04
##	504	0.418	6	18081 Milho - Safrinha	2019-07-04
##	505	-0.629	6	18081 Milho - Safrinha	2019-07-04
##	506	2.03	6	18081 Milho - Safrinha	2019-07-04
##	507	-0.174	6	18081 Milho - Safrinha	2019-07-04
##	508	-1.93	6	18081 Milho - Safrinha	2019-07-04
##	509	-2.53	6	18081 Milho - Safrinha	2019-07-04
##	510	-2.07	6	18081 Milho - Safrinha	2019-07-04
##	511	2.39	6	18081 Milho - Safrinha	2019-07-04
##	512	-2.69	6	18081 Milho - Safrinha	2019-07-04
##	513	-2.00	6	18081 Milho - Safrinha	2019-07-04
##	514	-3.04	6	18081 Milho - Safrinha	2019-07-04
##	515	0.307	6	18081 Milho - Safrinha	2019-07-04
##	516	-2.19	6	18081 Milho - Safrinha	2019-07-04
##	517	2.53	6	18081 Milho - Safrinha	2019-07-04
##	518	-2.64	6	18065 Milho - Safrinha	2019-06-18
##	519	0.765	6	18081 Milho - Safrinha	2019-07-04
##	520	2.42	6	18081 Milho - Safrinha	2019-07-04
##	521	2.69	6	18081 Milho - Safrinha	2019-07-04
##	522	2.48	6	18081 Milho - Safrinha	2019-07-04
##	523	1.87	6	18081 Milho - Safrinha	2019-07-04
##	524	0.713	6	18081 Milho - Safrinha	2019-07-04
##	525	-0.0225	6	18072 Milho - Safrinha	2019-06-25
##	526	2.48	6	18081 Milho - Safrinha	2019-07-04
##	527	0.405	6	18081 Milho - Safrinha	2019-07-04
##	528	1.97	6	18081 Milho - Safrinha	2019-07-04
##	529	-2.14	6	18081 Milho - Safrinha	2019-07-04
##	530	0.0141	6	18072 Milho - Safrinha	2019-06-25
##	531	0.405	6	18081 Milho - Safrinha	2019-07-04
##	532	-2.17	6	18072 Milho - Safrinha	2019-06-25
##	533	-0.809	6	18081 Milho - Safrinha	2019-07-04
##	534	-2.74	6	18081 Milho - Safrinha	2019-07-04
##	535	1.52	6	18081 Milho - Safrinha	2019-07-04
##	536	-0.623	6	18081 Milho - Safrinha	2019-07-04
##	537	0.278	6	18081 Milho - Safrinha	2019-07-04
##	538	0.541	6	18081 Milho - Safrinha	2019-07-04
##	539	0.965	6	18081 Milho - Safrinha	2019-07-04
##	540	2.16	6	18081 Milho - Safrinha	2019-07-04
##	541	2.48	6	18081 Milho - Safrinha	2019-07-04
##	542	-0.451	6	18081 Milho - Safrinha	2019-07-04
##	543	2.26	6	18081 Milho - Safrinha	2019-07-04

##	544	-1.94	6	18065	Milho	-	Safrinha	2019-06-18
##	545	3.07	6	18081	Milho	-	Safrinha	2019-07-04
##	546	2.51	6	18081	Milho	-	Safrinha	2019-07-04
##	547	-0.308	6	18081	Milho	-	Safrinha	2019-07-04
##	548	-2.68	6	18072	Milho	-	Safrinha	2019-06-25
##	549	0.795	6	18081	Milho	-	Safrinha	2019-07-04
##	550	1.93	6	18081	Milho	-	Safrinha	2019-07-04
##	551	1.00	6	18081	Milho	-	Safrinha	2019-07-04
##	552	0.723	6	18081	Milho	-	Safrinha	2019-07-04
##	553	1.09	6	18081	Milho	-	Safrinha	2019-07-04
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##	555	-2.50	6	18081	Milho	-	Safrinha	2019-07-04
##	556	-1.59	6	18081	Milho	-	Safrinha	2019-07-04
##	557	0.877	6	18081	Milho	-	Safrinha	2019-07-04
##	558	-0.724	6	18081	Milho	-	Safrinha	2019-07-04
##	559	0.737	6	18081	Milho	-	Safrinha	2019-07-04
##	560	0.464	6	18072	Milho	-	Safrinha	2019-06-25
##	561	1.93	6	18081	Milho	-	Safrinha	2019-07-04
##	562	0.719	6	18081	Milho	-	Safrinha	2019-07-04
##	563	-0.481	6	18081	Milho	-	Safrinha	2019-07-04
##	564	-0.0166	6	18081	Milho	-	Safrinha	2019-07-04
##	565	-0.129	6	18081	Milho	-	Safrinha	2019-07-04
##	566	-1.77	6	18081	Milho	-	Safrinha	2019-07-04
##	567	0.158	6	18081	Milho	-	Safrinha	2019-07-04
##	568	2.63	6	18081	Milho	-	Safrinha	2019-07-04
##	569	1.23	6	18081	Milho	-	Safrinha	2019-07-04
##	570	2.59	6	18081	Milho	-	Safrinha	2019-07-04
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##	574	1.48	6	18065	Milho	-	Safrinha	2019-06-18
##	575	-2.44	6	18081	Milho	-	Safrinha	2019-07-04
##	576	1.06	6	18081	Milho	-	Safrinha	2019-07-04
##	577	2.59	6	18081	Milho	-	Safrinha	2019-07-04
##	578	-2.03	6	18081	Milho	-	Safrinha	2019-07-04
##	579	-2.21	6	18081	Milho	-	Safrinha	2019-07-04
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##	584	0.980	6	18081	Milho	-	Safrinha	2019-07-04
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##	586	-3.04	6	18081	Milho	-	Safrinha	2019-07-04
##	587	0.464	6	18081	Milho	-	Safrinha	2019-07-04
##	588	-1.20	6	18081	Milho	-	Safrinha	2019-07-04
##	589	0.505	6	18081	Milho	-	Safrinha	2019-07-04
##	590	3.00	6	18081	Milho	-	Safrinha	2019-07-04
##	591	-0.743	6	18081	Milho	-	Safrinha	2019-07-04
##	592	0.838	6	18081	Milho	-	Safrinha	2019-07-04
##	593	2.17	6	18081	Milho	-	Safrinha	2019-07-04
##	594	0.830	6	18072	Milho	-	Safrinha	2019-06-25
##	595	-0.694	6	18081	Milho	-	Safrinha	2019-07-04
##	596	1.00	6	18081	Milho	-	Safrinha	2019-07-04
##	597	0.275	6	18072	Milho	-	Safrinha	2019-06-25

##	598	2.09	6	18081 Milho - Safrinha	2019-07-04
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##	601	0.387	3	18035 Cana-de-Açúcar	2019-05-19
##	602	-2.02	6	18065 Milho - Safrinha	2019-06-18
##	603	2.37	6	18065 Milho - Safrinha	2019-06-18
##	604	1.79	3	18035 Cana-de-Açúcar	2019-05-19
##	605	0.00714	6	18065 Milho - Safrinha	2019-06-18
##	606	-1.25	6	18065 Milho - Safrinha	2019-06-18
##	607	-0.328	6	18065 Milho - Safrinha	2019-06-18
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##	609	-2.52	6	18065 Milho - Safrinha	2019-06-18
##	610	1.59	6	18065 Milho - Safrinha	2019-06-18
##	611	-0.341	6	18065 Milho - Safrinha	2019-06-18
##	612	2.24	6	18065 Milho - Safrinha	2019-06-18
##	613	0.180	6	18065 Milho - Safrinha	2019-06-18
##	614	-0.449	6	18065 Milho - Safrinha	2019-06-18
##	615	-2.84	6	18065 Milho - Safrinha	2019-06-18
##	616	-1.00	6	18065 Milho - Safrinha	2019-06-18
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##	619	-2.48	6	18081 Milho - Safrinha	2019-07-04
##	620	1.38	6	18081 Milho - Safrinha	2019-07-04
##	621	0.451	6	18081 Milho - Safrinha	2019-07-04
##	622	-0.127	6	18081 Milho - Safrinha	2019-07-04
##	623	2.30	6	18065 Milho - Safrinha	2019-06-18
##	624	-1.88	6	18081 Milho - Safrinha	2019-07-04
##	625	-0.710	6	18081 Milho - Safrinha	2019-07-04
##	626	-0.652	6	18081 Milho - Safrinha	2019-07-04
##	627	1.88	6	18081 Milho - Safrinha	2019-07-04
##	628	0.969	6	18081 Milho - Safrinha	2019-07-04
##	629	-2.73	6	18081 Milho - Safrinha	2019-07-04
##	630	-2.56	6	18072 Milho - Safrinha	2019-06-25
##	631	1.78	6	18081 Milho - Safrinha	2019-07-04
##	632	1.42	6	18081 Milho - Safrinha	2019-07-04
##	633	2.39	6	18081 Milho - Safrinha	2019-07-04
##	634	-0.804	3	18035 Cana-de-Açúcar	2019-05-19
##	635	0.550	6	18081 Milho - Safrinha	2019-07-04
##	636	0.0796	6	18081 Milho - Safrinha	2019-07-04
##	637	-2.65	6	18081 Milho - Safrinha	2019-07-04
##	638	-1.49	6	18081 Milho - Safrinha	2019-07-04
##	639	1.87	6	18081 Milho - Safrinha	2019-07-04
##	640	1.61	6	18081 Milho - Safrinha	2019-07-04
##	641	0.329	6	18081 Milho - Safrinha	2019-07-04
##	642	-1.65	6	18081 Milho - Safrinha	2019-07-04
##	643	-0.775	6	18081 Milho - Safrinha	2019-07-04
##	644	-1.02	6	18081 Milho - Safrinha	2019-07-04
##	645	-0.574	6	18081 Milho - Safrinha	2019-07-04
##	646	2.31	6	18081 Milho - Safrinha	2019-07-04
##	647	1.96	6	18081 Milho - Safrinha	2019-07-04
##	648	1.25	6	18081 Milho - Safrinha	2019-07-04
##	649	-1.30	6	18081 Milho - Safrinha	2019-07-04
##	650	-0.711	6	18081 Milho - Safrinha	2019-07-04
##	651	2.61	6	18081 Milho - Safrinha	2019-07-04

##	652	2.99	6	18065 Milho - Safrinha	2019-06-18
##	653	-0.268	6	18081 Milho - Safrinha	2019-07-04
##	654	2.72	6	18081 Milho - Safrinha	2019-07-04
##	655	-0.450	6	18081 Milho - Safrinha	2019-07-04
##	656	0.524	6	18081 Milho - Safrinha	2019-07-04
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##	659	1.84	6	18081 Milho - Safrinha	2019-07-04
##	660	2.07	6	18081 Milho - Safrinha	2019-07-04
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##	662	1.50	6	18081 Milho - Safrinha	2019-07-04
##	663	1.18	6	18072 Milho - Safrinha	2019-06-25
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##	665	0.769	6	18081 Milho - Safrinha	2019-07-04
##	666	0.325	6	18081 Milho - Safrinha	2019-07-04
##	667	1.04	6	18081 Milho - Safrinha	2019-07-04
##	668	0.464	6	18081 Milho - Safrinha	2019-07-04
##	669	-1.90	6	18081 Milho - Safrinha	2019-07-04
##	670	-0.854	6	18081 Milho - Safrinha	2019-07-04
##	671	-1.70	6	18081 Milho - Safrinha	2019-07-04
##	672	-0.0317	6	18081 Milho - Safrinha	2019-07-04
##	673	-3.14	6	18081 Milho - Safrinha	2019-07-04
##	674	1.12	6	18081 Milho - Safrinha	2019-07-04
##	675	-0.160	6	18081 Milho - Safrinha	2019-07-04
##	676	0.757	6	18081 Milho - Safrinha	2019-07-04
##	677	-2.92	6	18081 Milho - Safrinha	2019-07-04
##	678	-0.190	6	18081 Milho - Safrinha	2019-07-04
##	679	2.03	6	18081 Milho - Safrinha	2019-07-04
##	680	2.38	6	18081 Milho - Safrinha	2019-07-04
##	681	0.635	6	18081 Milho - Safrinha	2019-07-04
##	682	1.19	6	18081 Milho - Safrinha	2019-07-04
##	683	1.56	6	18065 Milho - Safrinha	2019-06-18
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##	685	-1.12	6	18081 Milho - Safrinha	2019-07-04
##	686	-2.77	6	18081 Milho - Safrinha	2019-07-04
##	687	-0.953	6	18081 Milho - Safrinha	2019-07-04
##	688	-0.707	6	18081 Milho - Safrinha	2019-07-04
##	689	-1.14	6	18081 Milho - Safrinha	2019-07-04
##	690	2.15	6	18081 Milho - Safrinha	2019-07-04
##	691	3.11	6	18081 Milho - Safrinha	2019-07-04
##	692	-0.227	6	18081 Milho - Safrinha	2019-07-04
##	693	1.42	6	18081 Milho - Safrinha	2019-07-04
##	694	-2.34	6	18081 Milho - Safrinha	2019-07-04
##	695	-0.612	6	18081 Milho - Safrinha	2019-07-04
##	696	0.818	6	18081 Milho - Safrinha	2019-07-04
##	697	-2.75	6	18081 Milho - Safrinha	2019-07-04
##	698	2.74	6	18081 Milho - Safrinha	2019-07-04
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##	701	-0.218	6	18081 Milho - Safrinha	2019-07-04
##	702	-0.158	6	18081 Milho - Safrinha	2019-07-04
##	703	2.25	6	18065 Milho - Safrinha	2019-06-18
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##	712	2.30	6	18081 Milho	- Safrinha	2019-07-04
##	713	-1.22	6	18081 Milho	- Safrinha	2019-07-04
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##	715	-2.16	6	18081 Milho	- Safrinha	2019-07-04
##	716	-0.430	6	18081 Milho	- Safrinha	2019-07-04
##	717	-2.91	6	18081 Milho	- Safrinha	2019-07-04
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##	720	-2.75	6	18081 Milho	- Safrinha	2019-07-04
##	721	-2.26	6	18081 Milho	- Safrinha	2019-07-04
##	722	0.286	6	18081 Milho	- Safrinha	2019-07-04
##	723	0.195	6	18081 Milho	- Safrinha	2019-07-04
##	724	0.762	6	18081 Milho	- Safrinha	2019-07-04
##	725	1.77	6	18081 Milho	- Safrinha	2019-07-04
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##	727	1.18	6	18081 Milho	- Safrinha	2019-07-04
##	728	1.68	6	18081 Milho	- Safrinha	2019-07-04
##	729	1.35	6	18081 Milho	- Safrinha	2019-07-04
##	730	2.96	6	18081 Milho	- Safrinha	2019-07-04
##	731	2.47	6	18081 Milho	- Safrinha	2019-07-04
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##	738	2.95	6	18081 Milho	- Safrinha	2019-07-04
##	739	-1.17	6	18081 Milho	- Safrinha	2019-07-04
##	740	-2.43	6	18081 Milho	- Safrinha	2019-07-04
##	741	-0.608	6	18081 Milho	- Safrinha	2019-07-04
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##	743	0.389	6	18081 Milho	- Safrinha	2019-07-04
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##	747	2.92	6	18072 Milho	- Safrinha	2019-06-25
##	748	2.00	6	18081 Milho	- Safrinha	2019-07-04
##	749	0.629	6	18081 Milho	- Safrinha	2019-07-04
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##	751	-2.07	6	18065 Milho	- Safrinha	2019-06-18
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##	753	3.01	6	18081 Milho	- Safrinha	2019-07-04
##	754	2.23	6	18081 Milho	- Safrinha	2019-07-04
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##	756	1.70	6	18081 Milho	- Safrinha	2019-07-04
##	757	2.06	6	18081 Milho	- Safrinha	2019-07-04
##	758	0.723	6	18081 Milho	- Safrinha	2019-07-04
##	759	3.13	6	18081 Milho	- Safrinha	2019-07-04

## 760 -1.61	6	18081 Milho - Safrinha 2019-07-04
## 761 -0.428	6	18081 Milho - Safrinha 2019-07-04
## 762 -0.163	6	18081 Milho - Safrinha 2019-07-04
## 763 0.996	6	18081 Milho - Safrinha 2019-07-04
## 764 0.592	6	18081 Milho - Safrinha 2019-07-04
## 765 -0.648	6	18081 Milho - Safrinha 2019-07-04
## 766 1.19	6	18081 Milho - Safrinha 2019-07-04
## 767 -1.17	6	18081 Milho - Safrinha 2019-07-04
## 768 -0.570	6	18081 Milho - Safrinha 2019-07-04
## 769 -2.93	6	18081 Milho - Safrinha 2019-07-04
## 770 -1.58	6	18072 Milho - Safrinha 2019-06-25
## 771 -2.27	6	18081 Milho - Safrinha 2019-07-04
## 772 0.630	6	18081 Milho - Safrinha 2019-07-04
## 773 1.58	6	18081 Milho - Safrinha 2019-07-04
## 774 -2.40	6	18081 Milho - Safrinha 2019-07-04
## 775 -0.813	6	18081 Milho - Safrinha 2019-07-04
## 776 0.317	6	18081 Milho - Safrinha 2019-07-04
## 777 2.35	6	18081 Milho - Safrinha 2019-07-04
## 778 2.49	6	18081 Milho - Safrinha 2019-07-04
## 779 0.742	6	18081 Milho - Safrinha 2019-07-04
## 780 -0.754	3	18035 Cana-de-Açúcar 2019-05-19
## 781 -2.52	6	18081 Milho - Safrinha 2019-07-04
## 782 0.158	6	18081 Milho - Safrinha 2019-07-04
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## 784 0.706	6	18065 Milho - Safrinha 2019-06-18
## 785 -2.94	6	18081 Milho - Safrinha 2019-07-04
## 786 -2.39	6	18081 Milho - Safrinha 2019-07-04
## 787 -2.82	6	18081 Milho - Safrinha 2019-07-04
## 788 2.67	6	18081 Milho - Safrinha 2019-07-04
## 789 1.12	6	18081 Milho - Safrinha 2019-07-04
## 790 1.36	6	18065 Milho - Safrinha 2019-06-18
## 791 1.14	6	18081 Milho - Safrinha 2019-07-04
## 792 -2.21	6	18081 Milho - Safrinha 2019-07-04
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## 794 -0.984	6	18081 Milho - Safrinha 2019-07-04
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## 796 -2.41	6	18081 Milho - Safrinha 2019-07-04
## 797 -2.93	6	18065 Milho - Safrinha 2019-06-18
## 798 -1.12	6	18081 Milho - Safrinha 2019-07-04
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## 807 1.86	6	18081 Milho - Safrinha 2019-07-04
## 808 2.56	6	18081 Milho - Safrinha 2019-07-04
## 809 0.887	6	18081 Milho - Safrinha 2019-07-04
## 810 2.09	6	18081 Milho - Safrinha 2019-07-04
## 811 0.468	6	18081 Milho - Safrinha 2019-07-04
## 812 -3.00	6	18081 Milho - Safrinha 2019-07-04
## 813 -0.331	6	18081 Milho - Safrinha 2019-07-04

##	814	-0.174	6	18081 Milho - Safrinha	2019-07-04
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##	816	-1.64	6	18081 Milho - Safrinha	2019-07-04
##	817	-1.35	6	18081 Milho - Safrinha	2019-07-04
##	818	-2.55	6	18081 Milho - Safrinha	2019-07-04
##	819	1.75	6	18081 Milho - Safrinha	2019-07-04
##	820	-1.20	6	18081 Milho - Safrinha	2019-07-04
##	821	1.82	6	18081 Milho - Safrinha	2019-07-04
##	822	-2.89	6	18081 Milho - Safrinha	2019-07-04
##	823	2.46	6	18081 Milho - Safrinha	2019-07-04
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##	828	1.16	6	18081 Milho - Safrinha	2019-07-04
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##	849	-2.61	6	18072 Milho - Safrinha	2019-06-25
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##	858	-1.07	6	18072 Milho - Safrinha	2019-06-25
##	859	-0.654	6	18081 Milho - Safrinha	2019-07-04
##	860	-2.42	6	18081 Milho - Safrinha	2019-07-04
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##	863	1.57	6	18081 Milho - Safrinha	2019-07-04
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##	866	0.0829	6	18081 Milho - Safrinha	2019-07-04
##	867	-2.71	6	18072 Milho - Safrinha	2019-06-25

##	868	1.17	6	18081 Milho - Safrinha	2019-07-04
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##	870	-1.86	6	18081 Milho - Safrinha	2019-07-04
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##	957	-0.668	3	17966 Cana-de-Açúcar	2019-03-11
##	958	-0.721	3	17966 Cana-de-Açúcar	2019-03-11
##	959	-1.38	3	17966 Cana-de-Açúcar	2019-03-11
##	960	-2.11	3	17966 Cana-de-Açúcar	2019-03-11
##	961	0.0335	3	17966 Cana-de-Açúcar	2019-03-11
##	962	-0.330	3	17966 Cana-de-Açúcar	2019-03-11
##	963	2.93	3	17966 Cana-de-Açúcar	2019-03-11
##	964	2.56	3	17966 Cana-de-Açúcar	2019-03-11
##	965	-2.76	3	17966 Cana-de-Açúcar	2019-03-11
##	966	-0.244	3	17966 Cana-de-Açúcar	2019-03-11
##	967	-0.843	3	17966 Cana-de-Açúcar	2019-03-11
##	968	-1.79	3	17966 Cana-de-Açúcar	2019-03-11
##	969	1.03	3	17966 Cana-de-Açúcar	2019-03-11
##	970	1.45	3	17966 Cana-de-Açúcar	2019-03-11
##	971	0.246	3	17966 Cana-de-Açúcar	2019-03-11
##	972	-2.22	3	17966 Cana-de-Açúcar	2019-03-11
##	973	-1.58	3	17966 Cana-de-Açúcar	2019-03-11
##	974	1.02	3	17966 Cana-de-Açúcar	2019-03-11
##	975	-0.732	3	17966 Cana-de-Açúcar	2019-03-11

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## 976 -1.29      3      17966 Cana-de-Açúcar 2019-03-11
## 977  2.40      3      17966 Cana-de-Açúcar 2019-03-11
## 978 -2.07      3      17966 Cana-de-Açúcar 2019-03-11
## 979 -2.72      3      17966 Cana-de-Açúcar 2019-03-11
## 980  0.239     3      17966 Cana-de-Açúcar 2019-03-11
## 981  1.24      3      17966 Cana-de-Açúcar 2019-03-11
## 982 -0.0157    3      17966 Cana-de-Açúcar 2019-03-11
## 983  0.674     3      17966 Cana-de-Açúcar 2019-03-11
## 984 -2.83      3      17966 Cana-de-Açúcar 2019-03-11
## 985  0.831     3      17966 Cana-de-Açúcar 2019-03-11
## 986 -2.99      3      17966 Cana-de-Açúcar 2019-03-11
## 987 -0.780     3      17966 Cana-de-Açúcar 2019-03-11
## 988  0.337     3      17966 Cana-de-Açúcar 2019-03-11
## 989  2.49      3      17966 Cana-de-Açúcar 2019-03-11
## 990  1.49      3      17966 Cana-de-Açúcar 2019-03-11
## 991  0.127     3      17966 Cana-de-Açúcar 2019-03-11
## 992  0.165     3      17966 Cana-de-Açúcar 2019-03-11
## 993 -1.26      3      17966 Cana-de-Açúcar 2019-03-11
## 994  0.150     3      17966 Cana-de-Açúcar 2019-03-11
## 995 -2.95      3      17966 Cana-de-Açúcar 2019-03-11
## 996 -0.642     3      17966 Cana-de-Açúcar 2019-03-11
## 997 -0.529     3      17966 Cana-de-Açúcar 2019-03-11
## 998 -0.508     3      17966 Cana-de-Açúcar 2019-03-11
## 999  0.544     3      17966 Cana-de-Açúcar 2019-03-11
## 1000 1.96      3      17966 Cana-de-Açúcar 2019-03-11
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##      * <fct>           <dbl>
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## 2 Milho - Safrinha 2.22
## 3 Milho - Safrinha 3.27
## 4 Milho - Safrinha 0.168
## 5 Milho - Safrinha 3.84
## 6 Milho - Safrinha 3.59
## 7 Milho - Safrinha 0.490
## 8 Milho - Safrinha 5.21
## 9 Milho - Safrinha 4.28
## 10 Milho - Safrinha 3.49
## 11 Milho - Safrinha -1.60
## 12 Milho - Safrinha 3.66
## 13 Milho - Safrinha -0.0112
## 14 Milho - Safrinha 3.74
## 15 Milho - Safrinha 3.47
## 16 Milho - Safrinha 1.36
## 17 Milho - Safrinha 2.35
## 18 Milho - Safrinha 4.59
## 19 Milho - Safrinha 4.65
## 20 Milho - Safrinha 3.04
## 21 Milho - Safrinha 3.01
## 22 Milho - Safrinha 4.42
## 23 Milho - Safrinha 4.08
## 24 Milho - Safrinha 1.31
## 25 Milho - Safrinha 0.753
## 26 Milho - Safrinha 2.69
## 27 Milho - Safrinha 5.23

```


##	28 Milho - Safrinha	2.74
##	29 Milho - Safrinha	5.14
##	30 Milho - Safrinha	2.64
##	31 Milho - Safrinha	4.91
##	32 Milho - Safrinha	3.35
##	33 Milho - Safrinha	1.16
##	34 Milho - Safrinha	4.02
##	35 Milho - Safrinha	0.733
##	36 Milho - Safrinha	4.51
##	37 Milho - Safrinha	4.26
##	38 Milho - Safrinha	4.21
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##	40 Milho - Safrinha	3.88
##	41 Milho - Safrinha	2.85
##	42 Milho - Safrinha	0.556
##	43 Milho - Safrinha	3.71
##	44 Milho - Safrinha	3.33
##	45 Milho - Safrinha	6.30
##	46 Milho - Safrinha	4.05
##	47 Milho - Safrinha	-2.80
##	48 Milho - Safrinha	3.03
##	49 Milho - Safrinha	-0.259
##	50 Milho - Safrinha	0.823
##	51 Milho - Safrinha	4.19
##	52 Milho - Safrinha	4.61
##	53 Milho - Safrinha	5.09
##	54 Milho - Safrinha	3.54
##	55 Milho - Safrinha	5.79
##	56 Milho - Safrinha	6.15
##	57 Milho - Safrinha	3.02
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##	63 Milho - Safrinha	0.754
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##	72 Milho - Safrinha	3.77
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##	75 Milho - Safrinha	4.19
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##	88 Milho - Safrinha	4.55
##	89 Milho - Safrinha	-2.41
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##	139 Milho - Safrinha	1.30
##	140 Milho - Safrinha	2.49
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##	163 Milho - Safrinha	3.07
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##	167 Milho - Safrinha	4.85
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##	217	Milho - Safrinha	4.42
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##	221	Milho - Safrinha	3.81
##	222	Milho - Safrinha	1.22
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##	226	Milho - Safrinha	3.88
##	227	Milho - Safrinha	-3.23
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##	363 Milho - Safrinha	2.68
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##	366 Milho - Safrinha	3.87
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##	417	Milho - Safrinha	4.70
##	418	Milho - Safrinha	0.833
##	419	Milho - Safrinha	2.93
##	420	Milho - Safrinha	4.48
##	421	Milho - Safrinha	3.52
##	422	Milho - Safrinha	2.28
##	423	Milho - Safrinha	2.35
##	424	Milho - Safrinha	2.24
##	425	Milho - Safrinha	6.26
##	426	Milho - Safrinha	5.91
##	427	Milho - Safrinha	2.60
##	428	Milho - Safrinha	4.83
##	429	Milho - Safrinha	3.67
##	430	Milho - Safrinha	2.33
##	431	Milho - Safrinha	1.73
##	432	Milho - Safrinha	2.58
##	433	Milho - Safrinha	2.11
##	434	Milho - Safrinha	3.74
##	435	Milho - Safrinha	3.70
##	436	Milho - Safrinha	2.61
##	437	Milho - Safrinha	4.24
##	438	Milho - Safrinha	0.290
##	439	Milho - Safrinha	3.66
##	440	Milho - Safrinha	0.366
##	441	Milho - Safrinha	3.79
##	442	Milho - Safrinha	4.37
##	443	Milho - Safrinha	0.679
##	444	Milho - Safrinha	4.68
##	445	Milho - Safrinha	3.92
##	446	Milho - Safrinha	-2.07
##	447	Milho - Safrinha	0.424
##	448	Milho - Safrinha	3.28
##	449	Milho - Safrinha	4.73
##	450	Milho - Safrinha	3.81
##	451	Milho - Safrinha	6.22
##	452	Milho - Safrinha	4.19
##	453	Milho - Safrinha	3.15
##	454	Milho - Safrinha	0.297
##	455	Milho - Safrinha	3.29
##	456	Milho - Safrinha	4.55
##	457	Milho - Safrinha	4.36
##	458	Milho - Safrinha	3.48
##	459	Milho - Safrinha	2.86

##	460 Milho - Safrinha	1.17
##	461 Milho - Safrinha	2.93
##	462 Milho - Safrinha	2.69
##	463 Milho - Safrinha	-0.525
##	464 Milho - Safrinha	3.87
##	465 Milho - Safrinha	4.95
##	466 Milho - Safrinha	-3.13
##	467 Milho - Safrinha	2.78
##	468 Milho - Safrinha	4.71
##	469 Milho - Safrinha	5.27
##	470 Milho - Safrinha	3.17
##	471 Milho - Safrinha	4.79
##	472 Milho - Safrinha	4.15
##	473 Milho - Safrinha	2.63
##	474 Milho - Safrinha	3.96
##	475 Milho - Safrinha	4.15
##	476 Milho - Safrinha	2.48
##	477 Milho - Safrinha	5.94
##	478 Milho - Safrinha	3.37
##	479 Milho - Safrinha	2.83
##	480 Milho - Safrinha	6.97
##	481 Milho - Safrinha	0.638
##	482 Milho - Safrinha	3.26
##	483 Milho - Safrinha	-8.95
##	484 Milho - Safrinha	3.62
##	485 Milho - Safrinha	2.32
##	486 Milho - Safrinha	5.94
##	487 Milho - Safrinha	4.59
##	488 Milho - Safrinha	3.14
##	489 Milho - Safrinha	0.111
##	490 Milho - Safrinha	3.36
##	491 Milho - Safrinha	4.15
##	492 Milho - Safrinha	5.46
##	493 Milho - Safrinha	-5.58
##	494 Milho - Safrinha	4.68
##	495 Milho - Safrinha	0.430
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##	497 Milho - Safrinha	2.53
##	498 Milho - Safrinha	1.54
##	499 Milho - Safrinha	4.18
##	500 Milho - Safrinha	5.01
##	501 Milho - Safrinha	2.71
##	502 Milho - Safrinha	5.19
##	503 Milho - Safrinha	4.95
##	504 Milho - Safrinha	3.42
##	505 Milho - Safrinha	-0.278
##	506 Milho - Safrinha	2.25
##	507 Milho - Safrinha	-4.62
##	508 Milho - Safrinha	1.23
##	509 Milho - Safrinha	5.10
##	510 Milho - Safrinha	4.53
##	511 Milho - Safrinha	4.65
##	512 Milho - Safrinha	4.63
##	513 Milho - Safrinha	2.38

##	514 Milho - Safrinha	4.37
##	515 Milho - Safrinha	1.33
##	516 Milho - Safrinha	4.21
##	517 Milho - Safrinha	4.36
##	518 Milho - Safrinha	6.47
##	519 Milho - Safrinha	4.94
##	520 Milho - Safrinha	3.73
##	521 Milho - Safrinha	3.42
##	522 Milho - Safrinha	4.54
##	523 Milho - Safrinha	2.67
##	524 Milho - Safrinha	1.84
##	525 Milho - Safrinha	5.82
##	526 Milho - Safrinha	3.29
##	527 Milho - Safrinha	3.89
##	528 Milho - Safrinha	-0.945
##	529 Milho - Safrinha	5.01
##	530 Milho - Safrinha	6.01
##	531 Milho - Safrinha	4.16
##	532 Milho - Safrinha	5.81
##	533 Milho - Safrinha	3.16
##	534 Milho - Safrinha	3.96
##	535 Milho - Safrinha	5.12
##	536 Milho - Safrinha	4.72
##	537 Milho - Safrinha	5.45
##	538 Milho - Safrinha	5.19
##	539 Milho - Safrinha	2.43
##	540 Milho - Safrinha	3.30
##	541 Milho - Safrinha	4.86
##	542 Milho - Safrinha	4.67
##	543 Milho - Safrinha	4.46
##	544 Milho - Safrinha	5.78
##	545 Milho - Safrinha	4.35
##	546 Milho - Safrinha	4.03
##	547 Milho - Safrinha	2.59
##	548 Milho - Safrinha	5.89
##	549 Milho - Safrinha	3.40
##	550 Milho - Safrinha	4.48
##	551 Milho - Safrinha	4.60
##	552 Milho - Safrinha	-2.17
##	553 Milho - Safrinha	4.29
##	554 Milho - Safrinha	5.08
##	555 Milho - Safrinha	4.02
##	556 Milho - Safrinha	3.36
##	557 Milho - Safrinha	4.73
##	558 Milho - Safrinha	3.57
##	559 Milho - Safrinha	3.91
##	560 Milho - Safrinha	5.71
##	561 Milho - Safrinha	4.24
##	562 Milho - Safrinha	1.50
##	563 Milho - Safrinha	3.67
##	564 Milho - Safrinha	2.27
##	565 Milho - Safrinha	2.15
##	566 Milho - Safrinha	2.21
##	567 Milho - Safrinha	1.36

##	568 Milho - Safrinha	4.34
##	569 Milho - Safrinha	3.24
##	570 Milho - Safrinha	5.65
##	571 Milho - Safrinha	-2.31
##	572 Milho - Safrinha	3.43
##	573 Milho - Safrinha	2.73
##	574 Milho - Safrinha	5.71
##	575 Milho - Safrinha	3.49
##	576 Milho - Safrinha	4.72
##	577 Milho - Safrinha	4.39
##	578 Milho - Safrinha	5.45
##	579 Milho - Safrinha	4.24
##	580 Milho - Safrinha	4.73
##	581 Milho - Safrinha	2.71
##	582 Milho - Safrinha	2.69
##	583 Milho - Safrinha	0.241
##	584 Milho - Safrinha	2.28
##	585 Milho - Safrinha	5.56
##	586 Milho - Safrinha	-0.981
##	587 Milho - Safrinha	3.57
##	588 Milho - Safrinha	4.00
##	589 Milho - Safrinha	2.13
##	590 Milho - Safrinha	3.20
##	591 Milho - Safrinha	-0.872
##	592 Milho - Safrinha	4.55
##	593 Milho - Safrinha	1.55
##	594 Milho - Safrinha	6.10
##	595 Milho - Safrinha	3.03
##	596 Milho - Safrinha	2.75
##	597 Milho - Safrinha	6.07
##	598 Milho - Safrinha	3.21
##	599 Milho - Safrinha	5.15
##	600 Milho - Safrinha	3.59
##	601 Cana-de-Açúcar	6.22
##	602 Milho - Safrinha	4.86
##	603 Milho - Safrinha	2.85
##	604 Cana-de-Açúcar	5.08
##	605 Milho - Safrinha	3.30
##	606 Milho - Safrinha	4.11
##	607 Milho - Safrinha	2.96
##	608 Milho - Safrinha	2.88
##	609 Milho - Safrinha	6.27
##	610 Milho - Safrinha	-5.19
##	611 Milho - Safrinha	4.53
##	612 Milho - Safrinha	3.18
##	613 Milho - Safrinha	3.05
##	614 Milho - Safrinha	5.17
##	615 Milho - Safrinha	5.32
##	616 Milho - Safrinha	2.75
##	617 Milho - Safrinha	4.48
##	618 Milho - Safrinha	3.61
##	619 Milho - Safrinha	2.49
##	620 Milho - Safrinha	3.37
##	621 Milho - Safrinha	2.25

##	622 Milho - Safrinha	5.65
##	623 Milho - Safrinha	5.50
##	624 Milho - Safrinha	4.42
##	625 Milho - Safrinha	3.25
##	626 Milho - Safrinha	-0.974
##	627 Milho - Safrinha	4.18
##	628 Milho - Safrinha	2.29
##	629 Milho - Safrinha	2.66
##	630 Milho - Safrinha	6.49
##	631 Milho - Safrinha	4.64
##	632 Milho - Safrinha	4.78
##	633 Milho - Safrinha	3.45
##	634 Cana-de-Açúcar	6.01
##	635 Milho - Safrinha	4.84
##	636 Milho - Safrinha	2.88
##	637 Milho - Safrinha	4.22
##	638 Milho - Safrinha	2.07
##	639 Milho - Safrinha	0.236
##	640 Milho - Safrinha	-2.54
##	641 Milho - Safrinha	4.38
##	642 Milho - Safrinha	5.23
##	643 Milho - Safrinha	3.93
##	644 Milho - Safrinha	-0.242
##	645 Milho - Safrinha	2.14
##	646 Milho - Safrinha	2.59
##	647 Milho - Safrinha	4.71
##	648 Milho - Safrinha	3.48
##	649 Milho - Safrinha	5.10
##	650 Milho - Safrinha	5.57
##	651 Milho - Safrinha	5.12
##	652 Milho - Safrinha	5.91
##	653 Milho - Safrinha	4.04
##	654 Milho - Safrinha	3.29
##	655 Milho - Safrinha	3.02
##	656 Milho - Safrinha	5.35
##	657 Milho - Safrinha	3.42
##	658 Milho - Safrinha	0.955
##	659 Milho - Safrinha	2.25
##	660 Milho - Safrinha	1.07
##	661 Milho - Safrinha	1.64
##	662 Milho - Safrinha	4.37
##	663 Milho - Safrinha	6.18
##	664 Milho - Safrinha	3.10
##	665 Milho - Safrinha	2.58
##	666 Milho - Safrinha	6.69
##	667 Milho - Safrinha	3.25
##	668 Milho - Safrinha	0.198
##	669 Milho - Safrinha	1.68
##	670 Milho - Safrinha	3.61
##	671 Milho - Safrinha	-0.629
##	672 Milho - Safrinha	4.80
##	673 Milho - Safrinha	3.42
##	674 Milho - Safrinha	3.23
##	675 Milho - Safrinha	2.64

```

## 676 Milho - Safrinha -0.319
## 677 Milho - Safrinha 2.30
## 678 Milho - Safrinha 3.59
## 679 Milho - Safrinha -1.93
## 680 Milho - Safrinha 4.73
## 681 Milho - Safrinha 3.76
## 682 Milho - Safrinha 3.47
## 683 Milho - Safrinha 5.26
## 684 Milho - Safrinha 1.39
## 685 Milho - Safrinha 0.934
## 686 Milho - Safrinha 5.38
## 687 Milho - Safrinha -3.96
## 688 Milho - Safrinha 1.74
## 689 Milho - Safrinha 5.14
## 690 Milho - Safrinha 4.37
## 691 Milho - Safrinha 1.62
## 692 Milho - Safrinha 0.0428
## 693 Milho - Safrinha 3.77
## 694 Milho - Safrinha 0.871
## 695 Milho - Safrinha 4.72
## 696 Milho - Safrinha -0.879
## 697 Milho - Safrinha 3.33
## 698 Milho - Safrinha 1.53
## 699 Milho - Safrinha 5.05
## 700 Milho - Safrinha 3.66
## 701 Milho - Safrinha 3.71
## 702 Milho - Safrinha 5.26
## 703 Milho - Safrinha 5.46
## 704 Milho - Safrinha 3.00
## 705 Milho - Safrinha 3.62
## 706 Milho - Safrinha 3.28
## 707 Milho - Safrinha 2.07
## 708 Milho - Safrinha 2.36
## 709 Milho - Safrinha -3.59
## 710 Milho - Safrinha 4.65
## 711 Milho - Safrinha 4.67
## 712 Milho - Safrinha -1.54
## 713 Milho - Safrinha 3.58
## 714 Milho - Safrinha 6.43
## 715 Milho - Safrinha 1.81
## 716 Milho - Safrinha 3.48
## 717 Milho - Safrinha 1.51
## 718 Milho - Safrinha 4.47
## 719 Milho - Safrinha 3.34
## 720 Milho - Safrinha 3.54
## 721 Milho - Safrinha 0.366
## 722 Milho - Safrinha 4.52
## 723 Milho - Safrinha 3.50
## 724 Milho - Safrinha 5.04
## 725 Milho - Safrinha 0.0243
## 726 Milho - Safrinha 3.22
## 727 Milho - Safrinha 4.32
## 728 Milho - Safrinha 2.02
## 729 Milho - Safrinha 5.23

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##	730 Milho - Safrinha	2.93
##	731 Milho - Safrinha	3.82
##	732 Milho - Safrinha	5.19
##	733 Milho - Safrinha	3.82
##	734 Milho - Safrinha	4.27
##	735 Milho - Safrinha	4.50
##	736 Milho - Safrinha	1.59
##	737 Milho - Safrinha	4.54
##	738 Milho - Safrinha	-0.578
##	739 Milho - Safrinha	1.23
##	740 Milho - Safrinha	-2.37
##	741 Milho - Safrinha	4.48
##	742 Milho - Safrinha	3.31
##	743 Milho - Safrinha	3.16
##	744 Milho - Safrinha	2.81
##	745 Milho - Safrinha	4.53
##	746 Milho - Safrinha	0.843
##	747 Milho - Safrinha	5.62
##	748 Milho - Safrinha	3.47
##	749 Milho - Safrinha	3.91
##	750 Milho - Safrinha	1.85
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##	752 Milho - Safrinha	4.48
##	753 Milho - Safrinha	-0.340
##	754 Milho - Safrinha	1.75
##	755 Milho - Safrinha	3.93
##	756 Milho - Safrinha	4.87
##	757 Milho - Safrinha	2.12
##	758 Milho - Safrinha	2.37
##	759 Milho - Safrinha	4.42
##	760 Milho - Safrinha	5.23
##	761 Milho - Safrinha	2.57
##	762 Milho - Safrinha	5.35
##	763 Milho - Safrinha	0.729
##	764 Milho - Safrinha	1.32
##	765 Milho - Safrinha	4.59
##	766 Milho - Safrinha	2.07
##	767 Milho - Safrinha	0.319
##	768 Milho - Safrinha	1.81
##	769 Milho - Safrinha	5.44
##	770 Milho - Safrinha	5.48
##	771 Milho - Safrinha	0.0623
##	772 Milho - Safrinha	4.98
##	773 Milho - Safrinha	3.03
##	774 Milho - Safrinha	3.21
##	775 Milho - Safrinha	3.79
##	776 Milho - Safrinha	3.10
##	777 Milho - Safrinha	3.67
##	778 Milho - Safrinha	5.42
##	779 Milho - Safrinha	3.23
##	780 Cana-de-Açúcar	5.83
##	781 Milho - Safrinha	4.68
##	782 Milho - Safrinha	-1.44
##	783 Milho - Safrinha	3.64

##	784 Milho - Safrinha	5.34
##	785 Milho - Safrinha	5.41
##	786 Milho - Safrinha	4.10
##	787 Milho - Safrinha	4.63
##	788 Milho - Safrinha	0.907
##	789 Milho - Safrinha	4.24
##	790 Milho - Safrinha	5.93
##	791 Milho - Safrinha	-0.458
##	792 Milho - Safrinha	0.646
##	793 Milho - Safrinha	4.33
##	794 Milho - Safrinha	0.327
##	795 Milho - Safrinha	4.52
##	796 Milho - Safrinha	2.24
##	797 Milho - Safrinha	6.08
##	798 Milho - Safrinha	4.95
##	799 Milho - Safrinha	4.02
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##	804 Milho - Safrinha	5.47
##	805 Milho - Safrinha	5.63
##	806 Milho - Safrinha	4.93
##	807 Milho - Safrinha	4.98
##	808 Milho - Safrinha	4.25
##	809 Milho - Safrinha	2.82
##	810 Milho - Safrinha	3.12
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##	813 Milho - Safrinha	4.43
##	814 Milho - Safrinha	6.84
##	815 Milho - Safrinha	1.37
##	816 Milho - Safrinha	3.10
##	817 Milho - Safrinha	2.93
##	818 Milho - Safrinha	4.36
##	819 Milho - Safrinha	-1.18
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##	821 Milho - Safrinha	2.45
##	822 Milho - Safrinha	4.16
##	823 Milho - Safrinha	2.60
##	824 Milho - Safrinha	0.960
##	825 Milho - Safrinha	2.85
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##	827 Milho - Safrinha	4.53
##	828 Milho - Safrinha	3.27
##	829 Milho - Safrinha	4.93
##	830 Milho - Safrinha	3.48
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##	832 Milho - Safrinha	4.23
##	833 Milho - Safrinha	0.424
##	834 Milho - Safrinha	4.81
##	835 Milho - Safrinha	4.90
##	836 Milho - Safrinha	4.08
##	837 Milho - Safrinha	2.71

##	838 Milho - Safrinha	5.37
##	839 Milho - Safrinha	4.94
##	840 Milho - Safrinha	0.741
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##	842 Milho - Safrinha	4.96
##	843 Milho - Safrinha	4.32
##	844 Milho - Safrinha	3.52
##	845 Milho - Safrinha	3.78
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##	847 Milho - Safrinha	4.86
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##	849 Milho - Safrinha	5.29
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##	856 Milho - Safrinha	3.50
##	857 Milho - Safrinha	-0.796
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##	859 Milho - Safrinha	4.98
##	860 Milho - Safrinha	2.78
##	861 Milho - Safrinha	4.08
##	862 Milho - Safrinha	-3.37
##	863 Milho - Safrinha	2.57
##	864 Milho - Safrinha	3.87
##	865 Milho - Safrinha	3.57
##	866 Milho - Safrinha	3.80
##	867 Milho - Safrinha	5.29
##	868 Milho - Safrinha	2.02
##	869 Cana-de-Açúcar	6.06
##	870 Milho - Safrinha	0.306
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##	872 Milho - Safrinha	-2.85
##	873 Milho - Safrinha	3.12
##	874 Milho - Safrinha	2.95
##	875 Milho - Safrinha	4.64
##	876 Milho - Safrinha	2.40
##	877 Milho - Safrinha	-4.46
##	878 Milho - Safrinha	4.35
##	879 Milho - Safrinha	3.68
##	880 Milho - Safrinha	5.86
##	881 Milho - Safrinha	3.16
##	882 Milho - Safrinha	4.60
##	883 Milho - Safrinha	1.80
##	884 Milho - Safrinha	5.66
##	885 Milho - Safrinha	6.21
##	886 Milho - Safrinha	5.36
##	887 Milho - Safrinha	5.35
##	888 Milho - Safrinha	3.61
##	889 Milho - Safrinha	2.20
##	890 Milho - Safrinha	4.64
##	891 Milho - Safrinha	4.12

##	892 Milho - Safrinha	3.70
##	893 Milho - Safrinha	2.10
##	894 Milho - Safrinha	4.79
##	895 Milho - Safrinha	6.18
##	896 Milho - Safrinha	4.93
##	897 Milho - Safrinha	4.97
##	898 Milho - Safrinha	-6.65
##	899 Milho - Safrinha	3.48
##	900 Milho - Safrinha	6.09
##	901 Milho - Safrinha	5.02
##	902 Milho - Safrinha	4.04
##	903 Milho - Safrinha	2.58
##	904 Milho - Safrinha	4.54
##	905 Milho - Safrinha	5.15
##	906 Milho - Safrinha	3.54
##	907 Milho - Safrinha	0.529
##	908 Milho - Safrinha	1.89
##	909 Milho - Safrinha	4.79
##	910 Milho - Safrinha	4.01
##	911 Milho - Safrinha	4.61
##	912 Milho - Safrinha	5.86
##	913 Milho - Safrinha	3.20
##	914 Milho - Safrinha	4.63
##	915 Milho - Safrinha	3.04
##	916 Milho - Safrinha	5.20
##	917 Milho - Safrinha	5.23
##	918 Milho - Safrinha	4.43
##	919 Milho - Safrinha	2.77
##	920 Milho - Safrinha	1.91
##	921 Milho - Safrinha	4.97
##	922 Milho - Safrinha	0.453
##	923 Milho - Safrinha	4.28
##	924 Milho - Safrinha	3.87
##	925 Milho - Safrinha	4.16
##	926 Milho - Safrinha	2.40
##	927 Milho - Safrinha	4.14
##	928 Milho - Safrinha	4.78
##	929 Milho - Safrinha	3.50
##	930 Milho - Safrinha	3.20
##	931 Milho - Safrinha	3.67
##	932 Milho - Safrinha	-1.94
##	933 Milho - Safrinha	4.65
##	934 Milho - Safrinha	5.63
##	935 Milho - Safrinha	4.20
##	936 Milho - Safrinha	4.00
##	937 Milho - Safrinha	2.32
##	938 Milho - Safrinha	6.73
##	939 Milho - Safrinha	2.73
##	940 Milho - Safrinha	4.21
##	941 Milho - Safrinha	3.32
##	942 Milho - Safrinha	-0.912
##	943 Milho - Safrinha	4.23
##	944 Milho - Safrinha	-7.19
##	945 Milho - Safrinha	4.38

##	946 Milho - Safrinha	4.93
##	947 Milho - Safrinha	4.66
##	948 Milho - Safrinha	5.69
##	949 Milho - Safrinha	4.69
##	950 Milho - Safrinha	2.76
##	951 Milho - Safrinha	4.40
##	952 Milho - Safrinha	4.74
##	953 Milho - Safrinha	6.27
##	954 Milho - Safrinha	-0.565
##	955 Milho - Safrinha	3.79
##	956 Solo Exposto	6.30
##	957 Solo Exposto	4.11
##	958 Solo Exposto	5.35
##	959 Solo Exposto	5.09
##	960 Solo Exposto	2.55
##	961 Solo Exposto	2.99
##	962 Solo Exposto	5.57
##	963 Solo Exposto	3.06
##	964 Solo Exposto	2.64
##	965 Solo Exposto	2.54
##	966 Solo Exposto	-0.481
##	967 Solo Exposto	1.88
##	968 Solo Exposto	6.99
##	969 Solo Exposto	4.36
##	970 Solo Exposto	6.86
##	971 Solo Exposto	6.65
##	972 Solo Exposto	5.32
##	973 Solo Exposto	3.67
##	974 Solo Exposto	6.22
##	975 Solo Exposto	4.87
##	976 Solo Exposto	3.72
##	977 Solo Exposto	5.20
##	978 Solo Exposto	6.25
##	979 Solo Exposto	0.605
##	980 Solo Exposto	6.73
##	981 Solo Exposto	-0.606
##	982 Solo Exposto	4.57
##	983 Solo Exposto	5.32
##	984 Solo Exposto	5.82
##	985 Solo Exposto	6.10
##	986 Solo Exposto	4.35
##	987 Solo Exposto	3.83
##	988 Solo Exposto	2.07
##	989 Solo Exposto	3.23
##	990 Solo Exposto	5.14
##	991 Solo Exposto	3.44
##	992 Solo Exposto	-4.89
##	993 Solo Exposto	1.90
##	994 Solo Exposto	3.80
##	995 Solo Exposto	2.64
##	996 Solo Exposto	-0.120
##	997 Solo Exposto	6.28
##	998 Solo Exposto	7.17
##	999 Solo Exposto	-0.0135

```
## 1000 Solo Exposto      4.19
## # ... with 1 more row
```

```
d1 %>%
  dplyr::filter(!is.na(julian.date)) %>%
  .[6500:7500,] %>%
  print(width = Inf, n = 1000)
```

```
## # A tibble: 1,001 x 18
```

##	burst_	step_id_	case_	x1_	y1_	x2_	y2_
##	* <dbl>	<int>	<lgl>	<dbl>	<dbl>	<dbl>	<dbl>
##	1	19	1285	FALSE	317779.	7975033.	317967. 7974955.
##	2	19	1285	FALSE	317779.	7975033.	317764. 7974973.
##	3	19	1285	FALSE	317779.	7975033.	317795. 7974970.
##	4	19	1285	FALSE	317779.	7975033.	317781. 7975088.
##	5	19	1285	FALSE	317779.	7975033.	317780. 7975013.
##	6	19	1285	FALSE	317779.	7975033.	317699. 7975046.
##	7	19	1285	FALSE	317779.	7975033.	317779. 7975034.
##	8	19	1286	FALSE	319040.	7974716.	319012. 7974713.
##	9	19	1286	FALSE	319040.	7974716.	319042. 7974712.
##	10	19	1286	FALSE	319040.	7974716.	318926. 7974765.
##	11	19	1286	FALSE	319040.	7974716.	319145. 7974953.
##	12	19	1286	FALSE	319040.	7974716.	319196. 7974904.
##	13	19	1286	FALSE	319040.	7974716.	319038. 7974716.
##	14	19	1286	FALSE	319040.	7974716.	319061. 7974708.
##	15	19	1287	FALSE	319572.	7974677.	319580. 7975229.
##	16	19	1343	FALSE	320359.	7976092.	319652. 7975713.
##	17	25	1409	FALSE	320081.	7975784.	318967. 7976138.
##	18	25	1410	TRUE	319826.	7975419.	319734. 7975565.
##	19	25	1410	FALSE	319826.	7975419.	319780. 7975424.
##	20	25	1410	FALSE	319826.	7975419.	319481. 7975419.
##	21	25	1410	FALSE	319826.	7975419.	319640. 7975812.
##	22	25	1411	TRUE	319734.	7975565.	319666. 7975496.
##	23	25	1411	FALSE	319734.	7975565.	319558. 7975227.
##	24	25	1411	FALSE	319734.	7975565.	319735. 7975564.
##	25	25	1411	FALSE	319734.	7975565.	319722. 7975499.
##	26	25	1411	FALSE	319734.	7975565.	319680. 7975768.
##	27	25	1411	FALSE	319734.	7975565.	319493. 7975588.
##	28	25	1411	FALSE	319734.	7975565.	319749. 7975579.
##	29	25	1411	FALSE	319734.	7975565.	319717. 7975568.
##	30	25	1411	FALSE	319734.	7975565.	319735. 7975565.
##	31	25	1412	TRUE	319666.	7975496.	319706. 7975272.
##	32	25	1412	FALSE	319666.	7975496.	319585. 7975444.
##	33	25	1412	FALSE	319666.	7975496.	319666. 7975494.
##	34	25	1412	FALSE	319666.	7975496.	319656. 7975514.
##	35	25	1412	FALSE	319666.	7975496.	319600. 7975528.
##	36	25	1412	FALSE	319666.	7975496.	319754. 7975567.
##	37	25	1412	FALSE	319666.	7975496.	319655. 7975546.
##	38	25	1412	FALSE	319666.	7975496.	319675. 7975472.
##	39	25	1412	FALSE	319666.	7975496.	319712. 7975541.
##	40	25	1413	FALSE	319706.	7975272.	319380. 7975043.
##	41	25	1413	FALSE	319706.	7975272.	319691. 7975262.
##	42	25	1413	FALSE	319706.	7975272.	319531. 7975343.
##	43	25	1413	FALSE	319706.	7975272.	319704. 7975271.
##	44	25	1413	FALSE	319706.	7975272.	319673. 7975322.

##	45	25	1414	FALSE	319778.	7975114.	319672.	7975324.
##	46	25	1416	FALSE	319785.	7975312.	319713.	7975319.
##	47	25	1416	FALSE	319785.	7975312.	319815.	7975500.
##	48	25	1416	FALSE	319785.	7975312.	319641.	7975305.
##	49	25	1422	FALSE	320047.	7974761.	318929.	7974920.
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##	51	26	1437	FALSE	319582.	7974493.	319214.	7974766.
##	52	26	1442	FALSE	319739.	7974679.	319519.	7974889.
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##	58	26	1454	FALSE	319705.	7975198.	319375.	7975045.
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##	60	26	1455	FALSE	319721.	7975219.	319859.	7975658.
##	61	26	1455	FALSE	319721.	7975219.	319705.	7975246.
##	62	26	1455	FALSE	319721.	7975219.	319703.	7975365.
##	63	26	1455	FALSE	319721.	7975219.	319572.	7975456.
##	64	26	1456	FALSE	319703.	7975292.	319420.	7975285.
##	65	26	1456	FALSE	319703.	7975292.	319538.	7975284.
##	66	26	1456	FALSE	319703.	7975292.	319707.	7975297.
##	67	26	1456	FALSE	319703.	7975292.	319769.	7975527.
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##	69	26	1456	FALSE	319703.	7975292.	319718.	7975335.
##	70	26	1457	FALSE	319713.	7975224.	319809.	7975472.
##	71	26	1457	FALSE	319713.	7975224.	319539.	7975255.
##	72	26	1457	FALSE	319713.	7975224.	319694.	7975230.
##	73	26	1458	TRUE	319723.	7975276.	319706.	7975375.
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##	75	26	1458	FALSE	319723.	7975276.	319715.	7975283.
##	76	26	1458	FALSE	319723.	7975276.	319753.	7975522.
##	77	26	1458	FALSE	319723.	7975276.	319444.	7975224.
##	78	26	1458	FALSE	319723.	7975276.	319661.	7975358.
##	79	26	1459	FALSE	319706.	7975375.	319733.	7975412.
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##	94	59	2092	FALSE	317076.	7979088.	316899.	7979061.
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##	174	59	2102	FALSE	315947.	7979093.	315927.	7979142.
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##	187	59	2104	TRUE	315886.	7979035.	316020.	7979085.
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##	218	59	2108	FALSE	316380.	7979116.	316343.	7979087.
##	219	59	2108	FALSE	316380.	7979116.	316380.	7979126.
##	220	59	2108	FALSE	316380.	7979116.	316367.	7979094.
##	221	59	2108	FALSE	316380.	7979116.	316372.	7979134.
##	222	59	2108	FALSE	316380.	7979116.	316295.	7979061.
##	223	59	2108	FALSE	316380.	7979116.	316332.	7978924.
##	224	59	2113	FALSE	314931.	7977615.	315191.	7977519.
##	225	60	2131	TRUE	315075.	7978536.	315686.	7978796.
##	226	60	2131	FALSE	315075.	7978536.	315250.	7978943.
##	227	61	2180	FALSE	319873.	7975946.	319726.	7975512.
##	228	61	2182	FALSE	319882.	7975959.	319799.	7975597.
##	229	65	2249	FALSE	320514.	7976277.	319446.	7975856.
##	230	67	2344	FALSE	319896.	7975475.	319078.	7975228.
##	231	67	2344	FALSE	319896.	7975475.	319858.	7975563.
##	232	67	2345	FALSE	319760.	7975262.	319582.	7975349.
##	233	67	2345	FALSE	319760.	7975262.	319635.	7975509.
##	234	67	2345	FALSE	319760.	7975262.	319725.	7975420.
##	235	67	2347	FALSE	319633.	7974521.	319676.	7975171.
##	236	69	2363	FALSE	321793.	7972514.	321540.	7972224.
##	237	69	2363	FALSE	321793.	7972514.	321761.	7971948.
##	238	69	2367	TRUE	319227.	7974187.	318819.	7973647.
##	239	69	2368	TRUE	318819.	7973647.	318767.	7973645.
##	240	69	2368	FALSE	318819.	7973647.	318823.	7973644.
##	241	69	2368	FALSE	318819.	7973647.	318757.	7973638.
##	242	69	2368	FALSE	318819.	7973647.	318816.	7973648.
##	243	69	2368	FALSE	318819.	7973647.	318671.	7973631.
##	244	69	2368	FALSE	318819.	7973647.	318525.	7973620.
##	245	69	2369	FALSE	318767.	7973645.	318767.	7973645.
##	246	69	2369	FALSE	318767.	7973645.	318746.	7973640.
##	247	69	2369	FALSE	318767.	7973645.	318747.	7973656.
##	248	69	2369	FALSE	318767.	7973645.	318755.	7973647.
##	249	69	2369	FALSE	318767.	7973645.	318763.	7973639.
##	250	69	2369	FALSE	318767.	7973645.	318768.	7973645.
##	251	69	2370	FALSE	318791.	7973703.	318721.	7973671.
##	252	69	2370	FALSE	318791.	7973703.	319015.	7973437.
##	253	69	2370	FALSE	318791.	7973703.	318291.	7973466.
##	254	69	2371	FALSE	318792.	7973698.	318528.	7973523.
##	255	69	2371	FALSE	318792.	7973698.	319074.	7973057.
##	256	69	2371	FALSE	318792.	7973698.	317916.	7973374.
##	257	69	2371	FALSE	318792.	7973698.	318781.	7973607.
##	258	69	2373	FALSE	318772.	7973727.	318805.	7973047.
##	259	69	2374	FALSE	318773.	7973699.	318879.	7973592.
##	260	69	2376	FALSE	318782.	7973711.	318755.	7973652.

##	261	69	2377	FALSE	318792.	7973732.	318422.	7973593.
##	262	69	2377	FALSE	318792.	7973732.	318713.	7973670.
##	263	70	2380	FALSE	318819.	7973772.	318678.	7973682.
##	264	70	2381	FALSE	318821.	7973769.	318678.	7973677.
##	265	70	2383	FALSE	318827.	7973763.	318822.	7973602.
##	266	70	2384	FALSE	318874.	7973763.	318607.	7973327.
##	267	70	2385	FALSE	318870.	7973889.	319180.	7973395.
##	268	70	2388	FALSE	319052.	7973935.	318270.	7974922.
##	269	70	2392	FALSE	319551.	7974648.	319367.	7974757.
##	270	70	2392	FALSE	319551.	7974648.	319287.	7974698.
##	271	70	2397	FALSE	319993.	7974588.	319217.	7974742.
##	272	71	2407	TRUE	319264.	7974713.	319353.	7974737.
##	273	71	2407	FALSE	319264.	7974713.	319163.	7974782.
##	274	71	2407	FALSE	319264.	7974713.	319274.	7974640.
##	275	71	2407	FALSE	319264.	7974713.	319265.	7974713.
##	276	71	2407	FALSE	319264.	7974713.	319250.	7974709.
##	277	71	2407	FALSE	319264.	7974713.	319263.	7974710.
##	278	71	2407	FALSE	319264.	7974713.	319264.	7974714.
##	279	71	2407	FALSE	319264.	7974713.	319335.	7974705.
##	280	71	2408	FALSE	319353.	7974737.	319370.	7974926.
##	281	71	2408	FALSE	319353.	7974737.	319331.	7974689.
##	282	71	2408	FALSE	319353.	7974737.	319395.	7974732.
##	283	71	2408	FALSE	319353.	7974737.	318937.	7975228.
##	284	71	2408	FALSE	319353.	7974737.	319367.	7974785.
##	285	71	2408	FALSE	319353.	7974737.	319339.	7974808.
##	286	71	2408	FALSE	319353.	7974737.	319383.	7974695.
##	287	71	2408	FALSE	319353.	7974737.	319336.	7974766.
##	288	71	2409	FALSE	319498.	7974777.	319440.	7974830.
##	289	71	2412	FALSE	319503.	7974672.	319551.	7975074.
##	290	71	2413	FALSE	319508.	7974678.	318981.	7975208.
##	291	71	2414	FALSE	319500.	7974667.	319339.	7974705.
##	292	71	2414	FALSE	319500.	7974667.	319208.	7974706.
##	293	71	2415	FALSE	319509.	7974678.	319455.	7974826.
##	294	71	2417	FALSE	319534.	7974686.	319433.	7974693.
##	295	71	2417	FALSE	319534.	7974686.	319420.	7974732.
##	296	71	2420	FALSE	319532.	7974690.	319338.	7974601.
##	297	71	2420	FALSE	319532.	7974690.	319100.	7974903.
##	298	71	2420	FALSE	319532.	7974690.	319425.	7974811.
##	299	71	2421	FALSE	319531.	7974691.	319579.	7975397.
##	300	71	2422	FALSE	319536.	7974692.	319344.	7975247.
##	301	71	2422	FALSE	319536.	7974692.	319320.	7974647.
##	302	71	2423	FALSE	319527.	7974693.	319347.	7975080.
##	303	71	2423	FALSE	319527.	7974693.	319412.	7974675.
##	304	71	2424	FALSE	319518.	7974686.	319439.	7974748.
##	305	71	2425	FALSE	319429.	7974625.	319355.	7974600.
##	306	71	2426	FALSE	319493.	7974680.	319293.	7974702.
##	307	71	2426	FALSE	319493.	7974680.	319270.	7974794.
##	308	71	2427	FALSE	319472.	7974717.	319137.	7974697.
##	309	71	2427	FALSE	319472.	7974717.	319476.	7974802.
##	310	71	2427	FALSE	319472.	7974717.	319341.	7974964.
##	311	71	2427	FALSE	319472.	7974717.	319447.	7974709.
##	312	71	2438	FALSE	319951.	7974599.	319346.	7974751.
##	313	72	2447	FALSE	319861.	7974795.	319494.	7974967.
##	314	72	2449	FALSE	319848.	7974795.	319578.	7975138.

##	315	72	2450	FALSE	319508.	7974783.	319488.	7974808.
##	316	72	2450	FALSE	319508.	7974783.	319407.	7974873.
##	317	72	2450	FALSE	319508.	7974783.	319479.	7974818.
##	318	72	2450	FALSE	319508.	7974783.	319458.	7974741.
##	319	72	2451	FALSE	319438.	7974594.	319257.	7974631.
##	320	72	2458	FALSE	319570.	7974451.	319374.	7974725.
##	321	72	2462	FALSE	319599.	7974435.	319391.	7974836.
##	322	72	2498	FALSE	319481.	7974758.	319350.	7974704.
##	323	72	2498	FALSE	319481.	7974758.	319093.	7974761.
##	324	72	2498	FALSE	319481.	7974758.	319474.	7974891.
##	325	72	2499	FALSE	319483.	7974723.	319434.	7974737.
##	326	72	2500	TRUE	319463.	7974700.	319438.	7974714.
##	327	72	2500	FALSE	319463.	7974700.	319357.	7974679.
##	328	72	2500	FALSE	319463.	7974700.	319394.	7974655.
##	329	72	2500	FALSE	319463.	7974700.	319212.	7974790.
##	330	72	2500	FALSE	319463.	7974700.	319365.	7974658.
##	331	72	2501	FALSE	319438.	7974714.	319438.	7974713.
##	332	72	2501	FALSE	319438.	7974714.	319431.	7974712.
##	333	72	2501	FALSE	319438.	7974714.	319342.	7974633.
##	334	72	2501	FALSE	319438.	7974714.	319438.	7974714.
##	335	72	2501	FALSE	319438.	7974714.	319441.	7974738.
##	336	72	2501	FALSE	319438.	7974714.	319438.	7974714.
##	337	72	2501	FALSE	319438.	7974714.	319448.	7974721.
##	338	72	2501	FALSE	319438.	7974714.	319440.	7974717.
##	339	72	2501	FALSE	319438.	7974714.	319441.	7974792.
##	340	72	2502	FALSE	319492.	7974656.	319561.	7975164.
##	341	72	2502	FALSE	319492.	7974656.	318925.	7974949.
##	342	72	2504	FALSE	319501.	7974726.	319204.	7975156.
##	343	72	2505	FALSE	319397.	7974602.	319194.	7974638.
##	344	72	2505	FALSE	319397.	7974602.	319343.	7974660.
##	345	72	2505	FALSE	319397.	7974602.	319236.	7974655.
##	346	73	2527	TRUE	316422.	7970224.	314596.	7970885.
##	347	73	2528	FALSE	314596.	7970885.	314590.	7970892.
##	348	73	2528	FALSE	314596.	7970885.	314406.	7971008.
##	349	73	2528	FALSE	314596.	7970885.	314620.	7970922.
##	350	73	2528	FALSE	314596.	7970885.	314670.	7971155.
##	351	73	2528	FALSE	314596.	7970885.	314604.	7970876.
##	352	73	2528	FALSE	314596.	7970885.	314256.	7971076.
##	353	73	2528	FALSE	314596.	7970885.	314595.	7970885.
##	354	73	2528	FALSE	314596.	7970885.	314597.	7970884.
##	355	73	2528	FALSE	314596.	7970885.	314597.	7970748.
##	356	73	2529	FALSE	313602.	7971053.	313766.	7971096.
##	357	73	2575	TRUE	314382.	7975973.	315544.	7975805.
##	358	73	2576	FALSE	315544.	7975805.	315537.	7975798.
##	359	73	2576	FALSE	315544.	7975805.	315537.	7975779.
##	360	73	2576	FALSE	315544.	7975805.	315853.	7975592.
##	361	73	2576	FALSE	315544.	7975805.	315324.	7976379.
##	362	73	2576	FALSE	315544.	7975805.	315538.	7975814.
##	363	73	2576	FALSE	315544.	7975805.	315276.	7976219.
##	364	73	2576	FALSE	315544.	7975805.	315537.	7975799.
##	365	73	2577	FALSE	315385.	7975673.	316019.	7975090.
##	366	73	2577	FALSE	315385.	7975673.	316044.	7973960.
##	367	73	2578	FALSE	314722.	7976175.	314863.	7976148.
##	368	73	2585	FALSE	316381.	7978566.	316397.	7978613.

##	369	73	2585	FALSE	316381.	7978566.	316553.	7978656.
##	370	73	2586	FALSE	316785.	7978528.	316639.	7978612.
##	371	74	2738	FALSE	320160.	7976004.	319862.	7975648.
##	372	74	2741	FALSE	320067.	7975828.	319295.	7975437.
##	373	74	2742	TRUE	319881.	7975461.	319536.	7975274.
##	374	74	2743	TRUE	319536.	7975274.	319451.	7975126.
##	375	74	2743	FALSE	319536.	7975274.	319583.	7975289.
##	376	74	2743	FALSE	319536.	7975274.	319692.	7975334.
##	377	74	2743	FALSE	319536.	7975274.	319858.	7975572.
##	378	74	2743	FALSE	319536.	7975274.	319550.	7975282.
##	379	74	2743	FALSE	319536.	7975274.	319526.	7975260.
##	380	74	2743	FALSE	319536.	7975274.	319507.	7975325.
##	381	74	2743	FALSE	319536.	7975274.	319629.	7975230.
##	382	74	2743	FALSE	319536.	7975274.	319536.	7975276.
##	383	74	2743	FALSE	319536.	7975274.	319475.	7975327.
##	384	74	2744	FALSE	319451.	7975126.	319483.	7975214.
##	385	74	2744	FALSE	319451.	7975126.	319542.	7974979.
##	386	74	2744	FALSE	319451.	7975126.	319143.	7974907.
##	387	74	2744	FALSE	319451.	7975126.	319449.	7975131.
##	388	74	2744	FALSE	319451.	7975126.	319500.	7974971.
##	389	74	2744	FALSE	319451.	7975126.	319458.	7975125.
##	390	74	2744	FALSE	319451.	7975126.	319444.	7975104.
##	391	74	2744	FALSE	319451.	7975126.	319375.	7975210.
##	392	74	2778	TRUE	319450.	7974646.	319320.	7974682.
##	393	74	2778	FALSE	319450.	7974646.	319376.	7974657.
##	394	74	2778	FALSE	319450.	7974646.	319413.	7974674.
##	395	74	2779	TRUE	319320.	7974682.	318957.	7974861.
##	396	74	2779	FALSE	319320.	7974682.	319321.	7974683.
##	397	74	2779	FALSE	319320.	7974682.	319241.	7974673.
##	398	74	2779	FALSE	319320.	7974682.	319176.	7974809.
##	399	74	2779	FALSE	319320.	7974682.	319324.	7974677.
##	400	74	2779	FALSE	319320.	7974682.	319324.	7974685.
##	401	74	2779	FALSE	319320.	7974682.	319399.	7974736.
##	402	74	2779	FALSE	319320.	7974682.	319325.	7974680.
##	403	74	2779	FALSE	319320.	7974682.	319380.	7974668.
##	404	74	2780	TRUE	318957.	7974861.	318175.	7974944.
##	405	74	2780	FALSE	318957.	7974861.	318958.	7974862.
##	406	74	2780	FALSE	318957.	7974861.	318950.	7974865.
##	407	74	2780	FALSE	318957.	7974861.	318750.	7974997.
##	408	74	2780	FALSE	318957.	7974861.	318956.	7974859.
##	409	74	2780	FALSE	318957.	7974861.	318885.	7974798.
##	410	74	2780	FALSE	318957.	7974861.	318881.	7975243.
##	411	74	2780	FALSE	318957.	7974861.	318947.	7974855.
##	412	74	2780	FALSE	318957.	7974861.	319022.	7974819.
##	413	74	2780	FALSE	318957.	7974861.	319007.	7974860.
##	414	74	2781	TRUE	318175.	7974944.	317452.	7975154.
##	415	74	2781	FALSE	318175.	7974944.	318174.	7974943.
##	416	74	2781	FALSE	318175.	7974944.	317968.	7974939.
##	417	74	2781	FALSE	318175.	7974944.	318165.	7974945.
##	418	74	2781	FALSE	318175.	7974944.	318243.	7974959.
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##	420	74	2781	FALSE	318175.	7974944.	317972.	7975371.
##	421	74	2781	FALSE	318175.	7974944.	318179.	7974940.
##	422	74	2781	FALSE	318175.	7974944.	318172.	7974944.

##	423	74	2782	TRUE	317452.	7975154.	316887.	7976064.
##	424	74	2782	FALSE	317452.	7975154.	317451.	7975186.
##	425	74	2782	FALSE	317452.	7975154.	317412.	7975153.
##	426	74	2782	FALSE	317452.	7975154.	317452.	7975298.
##	427	74	2782	FALSE	317452.	7975154.	317447.	7975273.
##	428	74	2782	FALSE	317452.	7975154.	317734.	7975455.
##	429	74	2782	FALSE	317452.	7975154.	317404.	7975325.
##	430	74	2782	FALSE	317452.	7975154.	317473.	7975143.
##	431	74	2783	FALSE	316887.	7976064.	316873.	7976092.
##	432	74	2783	FALSE	316887.	7976064.	316895.	7976070.
##	433	74	2783	FALSE	316887.	7976064.	317035.	7975923.
##	434	74	2783	FALSE	316887.	7976064.	316866.	7976082.
##	435	74	2783	FALSE	316887.	7976064.	316881.	7976098.
##	436	74	2783	FALSE	316887.	7976064.	316887.	7976063.
##	437	74	2783	FALSE	316887.	7976064.	316713.	7976176.
##	438	74	2783	FALSE	316887.	7976064.	316815.	7976127.
##	439	74	2783	FALSE	316887.	7976064.	316542.	7975916.
##	440	74	2784	FALSE	317100.	7977297.	317025.	7977230.
##	441	74	2784	FALSE	317100.	7977297.	317100.	7977260.
##	442	74	2784	FALSE	317100.	7977297.	317081.	7977264.
##	443	74	2785	FALSE	317093.	7977374.	317136.	7977249.
##	444	74	2785	FALSE	317093.	7977374.	316742.	7977254.
##	445	74	2790	FALSE	317027.	7977445.	316613.	7977372.
##	446	74	2791	FALSE	317034.	7977440.	317312.	7976717.
##	447	74	2794	FALSE	317024.	7977458.	317143.	7976972.
##	448	74	2795	FALSE	317038.	7977446.	316764.	7977102.
##	449	74	2796	FALSE	317022.	7977447.	317077.	7976913.
##	450	74	2798	FALSE	317020.	7977444.	317156.	7977267.
##	451	74	2805	FALSE	316928.	7977609.	317175.	7977086.
##	452	74	2807	FALSE	316274.	7978054.	316100.	7978775.
##	453	74	2812	FALSE	315552.	7978280.	315332.	7978754.
##	454	74	2822	FALSE	315575.	7978274.	315565.	7977596.
##	455	74	2826	TRUE	315439.	7978335.	315141.	7979205.
##	456	74	2827	FALSE	315141.	7979205.	315145.	7979190.
##	457	74	2827	FALSE	315141.	7979205.	315171.	7979187.
##	458	74	2828	FALSE	314684.	7979209.	315166.	7978871.
##	459	74	2831	TRUE	314380.	7977436.	315419.	7977387.
##	460	74	2832	TRUE	315419.	7977387.	316774.	7977225.
##	461	74	2832	FALSE	315419.	7977387.	315497.	7977451.
##	462	74	2832	FALSE	315419.	7977387.	315419.	7977387.
##	463	74	2832	FALSE	315419.	7977387.	315535.	7977488.
##	464	74	2832	FALSE	315419.	7977387.	315389.	7977312.
##	465	74	2832	FALSE	315419.	7977387.	315420.	7977388.
##	466	74	2832	FALSE	315419.	7977387.	315507.	7977359.
##	467	74	2832	FALSE	315419.	7977387.	315642.	7977241.
##	468	74	2832	FALSE	315419.	7977387.	315532.	7977437.
##	469	74	2832	FALSE	315419.	7977387.	315632.	7977170.
##	470	74	2833	FALSE	316774.	7977225.	316764.	7977220.
##	471	74	2833	FALSE	316774.	7977225.	316985.	7977017.
##	472	74	2833	FALSE	316774.	7977225.	316775.	7977225.
##	473	74	2833	FALSE	316774.	7977225.	316782.	7977219.
##	474	74	2833	FALSE	316774.	7977225.	316799.	7977161.
##	475	74	2833	FALSE	316774.	7977225.	316968.	7977111.
##	476	74	2833	FALSE	316774.	7977225.	317069.	7976689.

##	477	74	2833	FALSE	316774.	7977225.	316765.	7977220.
##	478	74	2834	FALSE	316806.	7977248.	316909.	7977162.
##	479	74	2834	FALSE	316806.	7977248.	316650.	7977359.
##	480	74	2835	FALSE	316958.	7977311.	316882.	7977130.
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##	1000	NA	NA NA	NA	NA	NA	NA

##	t1_	t2_	dt_	sl_
##	* <dtm>	<dtm>	<drtn>	<dbl>
##	1	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	203.
##	2	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	62.0
##	3	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	65.1
##	4	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	55.1
##	5	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	20.5
##	6	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	80.9
##	7	2019-05-06 00:00:08	2019-05-06 00:30:13 30.08333 mins	0.695
##	8	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	28.0
##	9	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	3.94
##	10	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	124.
##	11	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	259.
##	12	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	244.
##	13	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	1.77
##	14	2019-05-06 00:30:13	2019-05-06 01:00:48 30.58333 mins	22.1

##	15	2019-05-06	01:00:48	2019-05-06	01:31:00	30.20000	mins	552.
##	16	2019-05-07	05:02:21	2019-05-07	05:30:09	27.80000	mins	802.
##	17	2019-05-08	23:00:47	2019-05-08	23:30:46	29.98333	mins	1169.
##	18	2019-05-08	23:30:46	2019-05-09	00:00:35	29.81667	mins	172.
##	19	2019-05-08	23:30:46	2019-05-09	00:00:35	29.81667	mins	46.3
##	20	2019-05-08	23:30:46	2019-05-09	00:00:35	29.81667	mins	345.
##	21	2019-05-08	23:30:46	2019-05-09	00:00:35	29.81667	mins	435.
##	22	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	96.8
##	23	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	381.
##	24	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	1.46
##	25	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	66.4
##	26	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	211.
##	27	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	243.
##	28	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	20.5
##	29	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	17.5
##	30	2019-05-09	00:00:35	2019-05-09	00:30:05	29.50000	mins	0.986
##	31	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	228.
##	32	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	95.8
##	33	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	1.88
##	34	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	20.0
##	35	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	72.9
##	36	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	113.
##	37	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	51.1
##	38	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	25.8
##	39	2019-05-09	00:30:05	2019-05-09	01:00:08	30.05000	mins	64.9
##	40	2019-05-09	01:00:08	2019-05-09	01:30:18	30.16667	mins	399.
##	41	2019-05-09	01:00:08	2019-05-09	01:30:18	30.16667	mins	18.0
##	42	2019-05-09	01:00:08	2019-05-09	01:30:18	30.16667	mins	189.
##	43	2019-05-09	01:00:08	2019-05-09	01:30:18	30.16667	mins	2.33
##	44	2019-05-09	01:00:08	2019-05-09	01:30:18	30.16667	mins	59.7
##	45	2019-05-09	01:30:18	2019-05-09	02:00:47	30.48333	mins	236.
##	46	2019-05-09	02:30:46	2019-05-09	03:01:25	30.65000	mins	72.5
##	47	2019-05-09	02:30:46	2019-05-09	03:01:25	30.65000	mins	190.
##	48	2019-05-09	02:30:46	2019-05-09	03:01:25	30.65000	mins	145.
##	49	2019-05-09	05:30:48	2019-05-09	06:00:49	30.01667	mins	1129.
##	50	2019-05-09	12:01:30	2019-05-09	12:30:46	29.26667	mins	410.
##	51	2019-05-09	15:00:55	2019-05-09	15:30:45	29.83333	mins	458.
##	52	2019-05-09	17:31:31	2019-05-09	18:00:46	29.25000	mins	304.
##	53	2019-05-09	20:00:47	2019-05-09	20:30:46	29.98333	mins	777.
##	54	2019-05-09	23:30:11	2019-05-10	00:00:21	30.16667	mins	160.
##	55	2019-05-09	23:30:11	2019-05-10	00:00:21	30.16667	mins	113.
##	56	2019-05-09	23:30:11	2019-05-10	00:00:21	30.16667	mins	111.
##	57	2019-05-09	23:30:11	2019-05-10	00:00:21	30.16667	mins	230.
##	58	2019-05-09	23:30:11	2019-05-10	00:00:21	30.16667	mins	364.
##	59	2019-05-10	00:00:21	2019-05-10	00:30:46	30.41667	mins	75.8
##	60	2019-05-10	00:00:21	2019-05-10	00:30:46	30.41667	mins	460.
##	61	2019-05-10	00:00:21	2019-05-10	00:30:46	30.41667	mins	31.9
##	62	2019-05-10	00:00:21	2019-05-10	00:30:46	30.41667	mins	148.
##	63	2019-05-10	00:00:21	2019-05-10	00:30:46	30.41667	mins	280.
##	64	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	283.
##	65	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	165.
##	66	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	6.29
##	67	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	244.
##	68	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	145.

##	69	2019-05-10	00:30:46	2019-05-10	01:00:47	30.01667	mins	45.0
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##	71	2019-05-10	01:00:47	2019-05-10	01:30:34	29.78333	mins	177.
##	72	2019-05-10	01:00:47	2019-05-10	01:30:34	29.78333	mins	20.3
##	73	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	101.
##	74	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	101.
##	75	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	10.3
##	76	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	248.
##	77	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	284.
##	78	2019-05-10	01:30:34	2019-05-10	02:00:09	29.58333	mins	103.
##	79	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	45.2
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##	81	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	1.62
##	82	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	279.
##	83	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	24.6
##	84	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	35.2
##	85	2019-05-10	02:00:09	2019-05-10	02:30:10	30.01667	mins	6.17
##	86	2019-05-10	02:30:10	2019-05-10	03:00:47	30.61667	mins	303.
##	87	2019-05-10	02:30:10	2019-05-10	03:00:47	30.61667	mins	136.
##	88	2019-05-10	03:00:47	2019-05-10	03:30:25	29.63333	mins	275.
##	89	2019-05-10	03:30:25	2019-05-10	04:02:01	31.60000	mins	370.
##	90	2019-05-10	05:30:30	2019-05-10	06:00:48	30.30000	mins	227.
##	91	2019-05-10	06:00:48	2019-05-10	06:30:47	29.98333	mins	484.
##	92	2019-05-10	08:30:47	2019-05-10	09:00:55	30.13333	mins	968.
##	93	2019-05-25	14:01:55	2019-05-25	14:30:47	28.86667	mins	369.
##	94	2019-05-25	14:01:55	2019-05-25	14:30:47	28.86667	mins	179.
##	95	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	9.58
##	96	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	185.
##	97	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	137.
##	98	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	1.88
##	99	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	12.3
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##	102	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	398.
##	103	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	7.48
##	104	2019-05-25	14:30:47	2019-05-25	15:00:18	29.51667	mins	14.4
##	105	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	97.6
##	106	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	22.9
##	107	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	13.9
##	108	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	41.9
##	109	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	95.8
##	110	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	166.
##	111	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	0.608
##	112	2019-05-25	15:00:18	2019-05-25	15:30:47	30.48333	mins	49.2
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##	115	2019-05-25	15:30:47	2019-05-25	16:00:46	29.98333	mins	0.601
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##	119	2019-05-25	15:30:47	2019-05-25	16:00:46	29.98333	mins	33.6
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##	121	2019-05-25	15:30:47	2019-05-25	16:00:46	29.98333	mins	21.6
##	122	2019-05-25	15:30:47	2019-05-25	16:00:46	29.98333	mins	73.4

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##	124	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	6.88
##	125	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	36.8
##	126	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	37.7
##	127	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	229.
##	128	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	3.22
##	129	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	33.6
##	130	2019-05-25	16:00:46	2019-05-25	16:30:05	29.31667	mins	27.7
##	131	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	270.
##	132	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	7.83
##	133	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	7.35
##	134	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	204.
##	135	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	47.0
##	136	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	20.6
##	137	2019-05-25	16:30:05	2019-05-25	17:00:16	30.18333	mins	54.2
##	138	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	210.
##	139	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	19.4
##	140	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	15.8
##	141	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	0.176
##	142	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	34.1
##	143	2019-05-25	17:00:16	2019-05-25	17:30:32	30.26667	mins	33.9
##	144	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	151.
##	145	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	8.57
##	146	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	34.3
##	147	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	190.
##	148	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	0.363
##	149	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	95.2
##	150	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	15.2
##	151	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	47.8
##	152	2019-05-25	17:30:32	2019-05-25	18:00:09	29.61667	mins	51.3
##	153	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	54.1
##	154	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	9.86
##	155	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	25.6
##	156	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	85.8
##	157	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	36.5
##	158	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	2.03
##	159	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	1.31
##	160	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	3.35
##	161	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	405.
##	162	2019-05-25	18:00:09	2019-05-25	18:30:47	30.63333	mins	0.110
##	163	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	17.2
##	164	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	0.143
##	165	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	27.1
##	166	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	313.
##	167	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	10.2
##	168	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	81.7
##	169	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	19.5
##	170	2019-05-25	18:30:47	2019-05-25	19:00:46	29.98333	mins	64.3
##	171	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	48.0
##	172	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	384.
##	173	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	18.7
##	174	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	53.2
##	175	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	0.00155
##	176	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	0.850

##	177	2019-05-25	19:00:46	2019-05-25	19:30:47	30.01667	mins	9.95
##	178	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	52.8
##	179	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	167.
##	180	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	370.
##	181	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	171.
##	182	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	33.9
##	183	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	171.
##	184	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	0.808
##	185	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	297.
##	186	2019-05-25	19:30:47	2019-05-25	20:01:01	30.23333	mins	25.7
##	187	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	142.
##	188	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	6.59
##	189	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	128.
##	190	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	114.
##	191	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	33.3
##	192	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	44.3
##	193	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	146.
##	194	2019-05-25	20:01:01	2019-05-25	20:30:16	29.25000	mins	68.6
##	195	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	227.
##	196	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	70.9
##	197	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	9.56
##	198	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	17.0
##	199	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	25.7
##	200	2019-05-25	20:30:16	2019-05-25	21:00:10	29.90000	mins	338.
##	201	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	725.
##	202	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	132.
##	203	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	131.
##	204	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	2.19
##	205	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	4.67
##	206	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	50.9
##	207	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	17.0
##	208	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	20.5
##	209	2019-05-25	21:00:10	2019-05-25	21:30:37	30.45000	mins	8.30
##	210	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	522.
##	211	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	0.780
##	212	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	172.
##	213	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	20.1
##	214	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	178.
##	215	2019-05-25	21:30:37	2019-05-25	22:00:46	30.15000	mins	161.
##	216	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	3.34
##	217	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	193.
##	218	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	47.4
##	219	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	9.96
##	220	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	25.8
##	221	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	19.5
##	222	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	101.
##	223	2019-05-25	22:00:46	2019-05-25	22:30:35	29.81667	mins	198.
##	224	2019-05-26	00:30:38	2019-05-26	01:00:07	29.48333	mins	277.
##	225	2019-05-26	11:00:47	2019-05-26	11:30:47	30.00000	mins	664.
##	226	2019-05-26	11:00:47	2019-05-26	11:30:47	30.00000	mins	444.
##	227	2019-05-27	13:01:38	2019-05-27	13:30:47	29.15000	mins	458.
##	228	2019-05-27	14:01:00	2019-05-27	14:30:32	29.53333	mins	371.
##	229	2019-05-29	05:30:16	2019-05-29	06:00:47	30.51667	mins	1147.
##	230	2019-05-31	08:30:08	2019-05-31	09:00:08	30.00000	mins	854.

##	231	2019-05-31	08:30:08	2019-05-31	09:00:08	30.00000	mins	96.4
##	232	2019-05-31	09:00:08	2019-05-31	09:30:20	30.20000	mins	198.
##	233	2019-05-31	09:00:08	2019-05-31	09:30:20	30.20000	mins	276.
##	234	2019-05-31	09:00:08	2019-05-31	09:30:20	30.20000	mins	161.
##	235	2019-05-31	10:00:38	2019-05-31	10:30:46	30.13333	mins	651.
##	236	2019-05-31	22:01:19	2019-05-31	22:30:47	29.46667	mins	385.
##	237	2019-05-31	22:01:19	2019-05-31	22:30:47	29.46667	mins	566.
##	238	2019-06-01	00:00:11	2019-06-01	00:30:22	30.18333	mins	677.
##	239	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	51.1
##	240	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	6.03
##	241	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	61.7
##	242	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	2.70
##	243	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	148.
##	244	2019-06-01	00:30:22	2019-06-01	01:00:38	30.26667	mins	295.
##	245	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	0.0184
##	246	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	22.3
##	247	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	23.0
##	248	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	13.1
##	249	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	6.63
##	250	2019-06-01	01:00:38	2019-06-01	01:30:47	30.15000	mins	0.358
##	251	2019-06-01	01:30:47	2019-06-01	02:00:46	29.98333	mins	76.3
##	252	2019-06-01	01:30:47	2019-06-01	02:00:46	29.98333	mins	348.
##	253	2019-06-01	01:30:47	2019-06-01	02:00:46	29.98333	mins	553.
##	254	2019-06-01	02:00:46	2019-06-01	02:30:47	30.01667	mins	316.
##	255	2019-06-01	02:00:46	2019-06-01	02:30:47	30.01667	mins	701.
##	256	2019-06-01	02:00:46	2019-06-01	02:30:47	30.01667	mins	934.
##	257	2019-06-01	02:00:46	2019-06-01	02:30:47	30.01667	mins	92.3
##	258	2019-06-01	03:01:01	2019-06-01	03:30:12	29.18333	mins	680.
##	259	2019-06-01	03:30:12	2019-06-01	04:00:46	30.56667	mins	151.
##	260	2019-06-01	04:30:47	2019-06-01	05:00:48	30.01667	mins	64.7
##	261	2019-06-01	05:00:48	2019-06-01	05:30:47	29.98333	mins	395.
##	262	2019-06-01	05:00:48	2019-06-01	05:30:47	29.98333	mins	99.6
##	263	2019-06-01	08:00:47	2019-06-01	08:30:23	29.60000	mins	167.
##	264	2019-06-01	08:30:23	2019-06-01	09:00:47	30.40000	mins	169.
##	265	2019-06-01	09:30:47	2019-06-01	10:01:02	30.25000	mins	161.
##	266	2019-06-01	10:01:02	2019-06-01	10:30:46	29.73333	mins	511.
##	267	2019-06-01	10:30:46	2019-06-01	11:00:47	30.01667	mins	584.
##	268	2019-06-01	12:00:49	2019-06-01	12:30:47	29.96667	mins	1259.
##	269	2019-06-01	14:00:45	2019-06-01	14:30:47	30.03333	mins	214.
##	270	2019-06-01	14:00:45	2019-06-01	14:30:47	30.03333	mins	268.
##	271	2019-06-01	16:30:47	2019-06-01	17:00:20	29.55000	mins	791.
##	272	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	91.3
##	273	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	123.
##	274	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	74.1
##	275	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	0.156
##	276	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	15.0
##	277	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	3.66
##	278	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	0.422
##	279	2019-06-01	23:00:47	2019-06-01	23:30:46	29.98333	mins	70.8
##	280	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	190.
##	281	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	52.2
##	282	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	42.7
##	283	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	644.
##	284	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	50.1

##	285	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	72.9
##	286	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	51.5
##	287	2019-06-01	23:30:46	2019-06-02	00:00:47	30.01667	mins	33.9
##	288	2019-06-02	00:00:47	2019-06-02	00:30:46	29.98333	mins	77.8
##	289	2019-06-02	01:30:46	2019-06-02	02:00:47	30.01667	mins	405.
##	290	2019-06-02	02:00:47	2019-06-02	02:30:46	29.98333	mins	747.
##	291	2019-06-02	02:30:46	2019-06-02	03:00:36	29.83333	mins	166.
##	292	2019-06-02	02:30:46	2019-06-02	03:00:36	29.83333	mins	294.
##	293	2019-06-02	03:00:36	2019-06-02	03:30:49	30.21667	mins	157.
##	294	2019-06-02	04:00:46	2019-06-02	04:30:49	30.05000	mins	100.
##	295	2019-06-02	04:00:46	2019-06-02	04:30:49	30.05000	mins	123.
##	296	2019-06-02	05:30:47	2019-06-02	06:00:55	30.13333	mins	213.
##	297	2019-06-02	05:30:47	2019-06-02	06:00:55	30.13333	mins	482.
##	298	2019-06-02	05:30:47	2019-06-02	06:00:55	30.13333	mins	162.
##	299	2019-06-02	06:00:55	2019-06-02	06:30:33	29.63333	mins	708.
##	300	2019-06-02	06:30:33	2019-06-02	07:00:47	30.23333	mins	587.
##	301	2019-06-02	06:30:33	2019-06-02	07:00:47	30.23333	mins	220.
##	302	2019-06-02	07:00:47	2019-06-02	07:30:21	29.56667	mins	426.
##	303	2019-06-02	07:00:47	2019-06-02	07:30:21	29.56667	mins	116.
##	304	2019-06-02	07:30:21	2019-06-02	08:00:46	30.41667	mins	100.
##	305	2019-06-02	08:00:46	2019-06-02	08:30:47	30.01667	mins	77.7
##	306	2019-06-02	08:30:47	2019-06-02	09:00:46	29.98333	mins	201.
##	307	2019-06-02	08:30:47	2019-06-02	09:00:46	29.98333	mins	250.
##	308	2019-06-02	09:00:46	2019-06-02	09:30:46	30.00000	mins	336.
##	309	2019-06-02	09:00:46	2019-06-02	09:30:46	30.00000	mins	86.0
##	310	2019-06-02	09:00:46	2019-06-02	09:30:46	30.00000	mins	280.
##	311	2019-06-02	09:00:46	2019-06-02	09:30:46	30.00000	mins	26.0
##	312	2019-06-02	14:31:00	2019-06-02	15:01:00	30.00000	mins	624.
##	313	2019-06-02	20:30:33	2019-06-02	21:00:47	30.23333	mins	406.
##	314	2019-06-02	21:30:48	2019-06-02	22:00:35	29.78333	mins	436.
##	315	2019-06-02	22:00:35	2019-06-02	22:30:20	29.75000	mins	31.5
##	316	2019-06-02	22:00:35	2019-06-02	22:30:20	29.75000	mins	135.
##	317	2019-06-02	22:00:35	2019-06-02	22:30:20	29.75000	mins	45.3
##	318	2019-06-02	22:00:35	2019-06-02	22:30:20	29.75000	mins	65.8
##	319	2019-06-02	22:30:20	2019-06-02	23:00:35	30.25000	mins	184.
##	320	2019-06-03	02:00:47	2019-06-03	02:30:36	29.81667	mins	337.
##	321	2019-06-03	04:00:46	2019-06-03	04:30:47	30.01667	mins	452.
##	322	2019-06-03	22:00:09	2019-06-03	22:30:06	29.95000	mins	142.
##	323	2019-06-03	22:00:09	2019-06-03	22:30:06	29.95000	mins	388.
##	324	2019-06-03	22:00:09	2019-06-03	22:30:06	29.95000	mins	133.
##	325	2019-06-03	22:30:06	2019-06-03	23:00:09	30.05000	mins	51.7
##	326	2019-06-03	23:00:09	2019-06-03	23:30:48	30.65000	mins	28.7
##	327	2019-06-03	23:00:09	2019-06-03	23:30:48	30.65000	mins	108.
##	328	2019-06-03	23:00:09	2019-06-03	23:30:48	30.65000	mins	82.5
##	329	2019-06-03	23:00:09	2019-06-03	23:30:48	30.65000	mins	267.
##	330	2019-06-03	23:00:09	2019-06-03	23:30:48	30.65000	mins	107.
##	331	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	1.08
##	332	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	7.69
##	333	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	126.
##	334	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	0.522
##	335	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	23.9
##	336	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	0.0190
##	337	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	12.0
##	338	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	3.85

##	339	2019-06-03	23:30:48	2019-06-04	00:01:01	30.21667	mins	78.4
##	340	2019-06-04	00:01:01	2019-06-04	00:30:06	29.08333	mins	512.
##	341	2019-06-04	00:01:01	2019-06-04	00:30:06	29.08333	mins	638.
##	342	2019-06-04	01:00:10	2019-06-04	01:30:08	29.96667	mins	523.
##	343	2019-06-04	01:30:08	2019-06-04	02:00:08	30.00000	mins	206.
##	344	2019-06-04	01:30:08	2019-06-04	02:00:08	30.00000	mins	79.6
##	345	2019-06-04	01:30:08	2019-06-04	02:00:08	30.00000	mins	170.
##	346	2019-06-04	15:00:11	2019-06-04	15:30:30	30.31667	mins	1942.
##	347	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	8.94
##	348	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	227.
##	349	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	43.9
##	350	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	279.
##	351	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	12.0
##	352	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	390.
##	353	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	1.40
##	354	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	1.27
##	355	2019-06-04	15:30:30	2019-06-04	16:00:16	29.76667	mins	137.
##	356	2019-06-04	16:00:16	2019-06-04	16:30:18	30.03333	mins	169.
##	357	2019-06-05	15:00:47	2019-06-05	15:30:10	29.38333	mins	1174.
##	358	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	10.2
##	359	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	27.3
##	360	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	376.
##	361	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	615.
##	362	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	10.7
##	363	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	493.
##	364	2019-06-05	15:30:10	2019-06-05	16:00:37	30.45000	mins	9.07
##	365	2019-06-05	16:00:37	2019-06-05	16:30:25	29.80000	mins	861.
##	366	2019-06-05	16:00:37	2019-06-05	16:30:25	29.80000	mins	1835.
##	367	2019-06-05	16:30:25	2019-06-05	17:00:07	29.70000	mins	143.
##	368	2019-06-05	20:02:30	2019-06-05	20:30:47	28.28333	mins	49.5
##	369	2019-06-05	20:02:30	2019-06-05	20:30:47	28.28333	mins	195.
##	370	2019-06-05	20:30:47	2019-06-05	21:00:46	29.98333	mins	168.
##	371	2019-06-09	02:00:11	2019-06-09	02:30:11	30.00000	mins	465.
##	372	2019-06-09	03:30:35	2019-06-09	04:01:19	30.73333	mins	866.
##	373	2019-06-09	04:01:19	2019-06-09	04:30:34	29.25000	mins	393.
##	374	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	171.
##	375	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	48.9
##	376	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	167.
##	377	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	439.
##	378	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	16.2
##	379	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	17.8
##	380	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	58.8
##	381	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	103.
##	382	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	1.97
##	383	2019-06-09	04:30:34	2019-06-09	05:00:08	29.56667	mins	80.8
##	384	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	94.0
##	385	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	173.
##	386	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	378.
##	387	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	5.82
##	388	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	163.
##	389	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	6.45
##	390	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	22.7
##	391	2019-06-09	05:00:08	2019-06-09	05:30:46	30.63333	mins	114.
##	392	2019-06-09	22:00:37	2019-06-09	22:30:34	29.95000	mins	134.

##	393	2019-06-09	22:00:37	2019-06-09	22:30:34	29.95000	mins	75.0
##	394	2019-06-09	22:00:37	2019-06-09	22:30:34	29.95000	mins	46.2
##	395	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	406.
##	396	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	0.920
##	397	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	79.7
##	398	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	192.
##	399	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	5.90
##	400	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	4.70
##	401	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	96.0
##	402	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	4.76
##	403	2019-06-09	22:30:34	2019-06-09	23:00:06	29.53333	mins	61.3
##	404	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	787.
##	405	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	1.42
##	406	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	7.38
##	407	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	248.
##	408	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	2.30
##	409	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	96.2
##	410	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	389.
##	411	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	11.5
##	412	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	77.4
##	413	2019-06-09	23:00:06	2019-06-09	23:30:08	30.03333	mins	50.3
##	414	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	752.
##	415	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	0.779
##	416	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	206.
##	417	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	9.71
##	418	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	70.0
##	419	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	151.
##	420	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	472.
##	421	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	6.30
##	422	2019-06-09	23:30:08	2019-06-10	00:00:07	29.98333	mins	2.81
##	423	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	1072.
##	424	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	32.3
##	425	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	40.6
##	426	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	145.
##	427	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	120.
##	428	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	412.
##	429	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	179.
##	430	2019-06-10	00:00:07	2019-06-10	00:30:10	30.05000	mins	23.7
##	431	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	31.1
##	432	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	10.9
##	433	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	205.
##	434	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	27.7
##	435	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	34.8
##	436	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	0.673
##	437	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	207.
##	438	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	95.7
##	439	2019-06-10	00:30:10	2019-06-10	01:00:49	30.65000	mins	375.
##	440	2019-06-10	01:00:49	2019-06-10	01:30:46	29.95000	mins	100.
##	441	2019-06-10	01:00:49	2019-06-10	01:30:46	29.95000	mins	36.9
##	442	2019-06-10	01:00:49	2019-06-10	01:30:46	29.95000	mins	38.0
##	443	2019-06-10	01:30:46	2019-06-10	02:01:06	30.33333	mins	132.
##	444	2019-06-10	01:30:46	2019-06-10	02:01:06	30.33333	mins	371.
##	445	2019-06-10	04:01:31	2019-06-10	04:30:46	29.25000	mins	421.
##	446	2019-06-10	04:30:46	2019-06-10	05:00:47	30.01667	mins	775.

##	447	2019-06-10	06:00:47	2019-06-10	06:30:16	29.48333	mins	501.
##	448	2019-06-10	06:30:16	2019-06-10	07:00:16	30.00000	mins	440.
##	449	2019-06-10	07:00:16	2019-06-10	07:30:46	30.50000	mins	537.
##	450	2019-06-10	08:00:47	2019-06-10	08:31:06	30.31667	mins	223.
##	451	2019-06-10	11:30:46	2019-06-10	12:00:48	30.03333	mins	578.
##	452	2019-06-10	12:30:35	2019-06-10	13:00:09	29.56667	mins	742.
##	453	2019-06-10	15:00:47	2019-06-10	15:30:41	29.90000	mins	522.
##	454	2019-06-10	20:00:36	2019-06-10	20:30:47	30.18333	mins	678.
##	455	2019-06-10	22:00:46	2019-06-10	22:30:40	29.90000	mins	920.
##	456	2019-06-10	22:30:40	2019-06-10	23:00:23	29.71667	mins	15.7
##	457	2019-06-10	22:30:40	2019-06-10	23:00:23	29.71667	mins	34.5
##	458	2019-06-10	23:00:23	2019-06-10	23:30:09	29.76667	mins	588.
##	459	2019-06-11	00:30:49	2019-06-11	01:00:46	29.95000	mins	1040.
##	460	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	1365.
##	461	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	102.
##	462	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	0.303
##	463	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	154.
##	464	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	80.6
##	465	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	1.98
##	466	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	92.6
##	467	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	267.
##	468	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	125.
##	469	2019-06-11	01:00:46	2019-06-11	01:30:47	30.01667	mins	304.
##	470	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	11.0
##	471	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	297.
##	472	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	1.65
##	473	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	10.7
##	474	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	68.7
##	475	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	226.
##	476	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	612.
##	477	2019-06-11	01:30:47	2019-06-11	02:00:47	30.00000	mins	10.3
##	478	2019-06-11	02:00:47	2019-06-11	02:30:46	29.98333	mins	134.
##	479	2019-06-11	02:00:47	2019-06-11	02:30:46	29.98333	mins	191.
##	480	2019-06-11	02:30:46	2019-06-11	03:00:54	30.13333	mins	197.
##	481	2019-06-11	02:30:46	2019-06-11	03:00:54	30.13333	mins	222.
##	482	2019-06-11	04:30:34	2019-06-11	05:00:11	29.61667	mins	262.
##	483	2019-06-11	04:30:34	2019-06-11	05:00:11	29.61667	mins	222.
##	484	2019-06-11	05:00:11	2019-06-11	05:30:48	30.61667	mins	282.
##	485	2019-06-11	06:30:41	2019-06-11	07:00:16	29.58333	mins	616.
##	486	2019-06-11	07:00:16	2019-06-11	07:30:47	30.51667	mins	946.
##	487	2019-06-11	10:01:31	2019-06-11	10:30:47	29.26667	mins	687.
##	488	2019-06-11	10:30:47	2019-06-11	11:00:46	29.98333	mins	581.
##	489	2019-06-11	10:30:47	2019-06-11	11:00:46	29.98333	mins	626.
##	490	2019-06-18	02:30:35	2019-06-18	03:00:07	29.53333	mins	523.
##	491	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	7.93
##	492	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	2.48
##	493	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	54.9
##	494	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	99.2
##	495	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	12.5
##	496	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	307.
##	497	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	0.218
##	498	2019-06-18	03:00:07	2019-06-18	03:30:47	30.66667	mins	6.02
##	499	2019-06-18	03:30:47	2019-06-18	04:01:01	30.23333	mins	82.7
##	500	2019-06-18	03:30:47	2019-06-18	04:01:01	30.23333	mins	153.

##	501	2019-06-18	03:30:47	2019-06-18	04:01:01	30.23333	mins	7.95
##	502	2019-06-18	03:30:47	2019-06-18	04:01:01	30.23333	mins	11.6
##	503	2019-06-18	03:30:47	2019-06-18	04:01:01	30.23333	mins	41.0
##	504	2019-06-27	09:00:48	2019-06-27	09:30:47	29.98333	mins	419.
##	505	2019-06-27	10:30:48	2019-06-27	11:00:47	29.98333	mins	226.
##	506	2019-06-27	10:30:48	2019-06-27	11:00:47	29.98333	mins	58.3
##	507	2019-06-28	11:30:47	2019-06-28	12:00:59	30.20000	mins	161.
##	508	2019-07-01	00:30:47	2019-07-01	01:00:34	29.78333	mins	1114.
##	509	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	612.
##	510	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	135.
##	511	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	36.9
##	512	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	98.0
##	513	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	51.1
##	514	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	24.9
##	515	2019-07-01	01:00:34	2019-07-01	01:30:49	30.25000	mins	18.3
##	516	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	216.
##	517	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	6.40
##	518	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	404.
##	519	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	3.31
##	520	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	73.5
##	521	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	33.0
##	522	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	8.11
##	523	2019-07-01	01:30:49	2019-07-01	02:00:33	29.73333	mins	50.5
##	524	2019-07-01	12:00:39	2019-07-01	12:30:46	30.11667	mins	713.
##	525	2019-07-01	17:31:04	2019-07-01	18:01:49	30.75000	mins	522.
##	526	2019-07-01	20:31:25	2019-07-01	21:00:33	29.13333	mins	622.
##	527	2019-07-01	21:00:33	2019-07-01	21:30:16	29.71667	mins	639.
##	528	2019-07-01	22:30:46	2019-07-01	23:00:47	30.01667	mins	211.
##	529	2019-07-01	22:30:46	2019-07-01	23:00:47	30.01667	mins	202.
##	530	2019-07-01	23:00:47	2019-07-01	23:30:48	30.01667	mins	290.
##	531	2019-07-01	23:00:47	2019-07-01	23:30:48	30.01667	mins	184.
##	532	2019-07-01	23:00:47	2019-07-01	23:30:48	30.01667	mins	256.
##	533	2019-07-02	00:31:07	2019-07-02	01:00:34	29.45000	mins	402.
##	534	2019-07-02	00:31:07	2019-07-02	01:00:34	29.45000	mins	41.1
##	535	2019-07-02	00:31:07	2019-07-02	01:00:34	29.45000	mins	200.
##	536	2019-07-02	00:31:07	2019-07-02	01:00:34	29.45000	mins	128.
##	537	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	238.
##	538	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	55.6
##	539	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	198.
##	540	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	5.39
##	541	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	0.939
##	542	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	62.9
##	543	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	18.2
##	544	2019-07-02	01:00:34	2019-07-02	01:30:06	29.53333	mins	0.550
##	545	2019-07-02	01:30:06	2019-07-02	02:00:47	30.68333	mins	1329.
##	546	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	15.4
##	547	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	5.45
##	548	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	38.9
##	549	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	113.
##	550	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	28.8
##	551	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	61.1
##	552	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	180.
##	553	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	36.4
##	554	2019-07-02	02:00:47	2019-07-02	02:30:46	29.98333	mins	0.995

##	555	2019-07-02	02:30:46	2019-07-02	03:00:35	29.81667	mins	55.7
##	556	2019-07-02	03:00:35	2019-07-02	03:30:09	29.56667	mins	582.
##	557	2019-07-02	03:00:35	2019-07-02	03:30:09	29.56667	mins	75.2
##	558	2019-07-02	03:30:09	2019-07-02	04:00:19	30.16667	mins	99.6
##	559	2019-07-02	10:00:06	2019-07-02	10:30:47	30.68333	mins	105.
##	560	2019-07-02	10:00:06	2019-07-02	10:30:47	30.68333	mins	121.
##	561	2019-07-02	10:00:06	2019-07-02	10:30:47	30.68333	mins	53.0
##	562	2019-07-02	10:00:06	2019-07-02	10:30:47	30.68333	mins	253.
##	563	2019-07-02	10:30:47	2019-07-02	11:01:31	30.73333	mins	180.
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##	25	2.39	3	17966	Cana-de-Açúcar	2019-03-11
##	26	-0.307	3	17966	Cana-de-Açúcar	2019-03-11
##	27	0.910	3	17966	Cana-de-Açúcar	2019-03-11
##	28	-1.35	3	17966	Cana-de-Açúcar	2019-03-11
##	29	0.812	3	17966	Cana-de-Açúcar	2019-03-11
##	30	-2.11	3	17966	Cana-de-Açúcar	2019-03-11
##	31	0.965	3	17966	Cana-de-Açúcar	2019-03-11
##	32	-0.207	3	17966	Cana-de-Açúcar	2019-03-11
##	33	0.787	3	17966	Cana-de-Açúcar	2019-03-11
##	34	-1.89	3	17966	Cana-de-Açúcar	2019-03-11
##	35	-1.24	3	17966	Cana-de-Açúcar	2019-03-11
##	36	3.03	3	17966	Cana-de-Açúcar	2019-03-11
##	37	-2.15	3	17966	Cana-de-Açúcar	2019-03-11
##	38	1.16	3	17966	Cana-de-Açúcar	2019-03-11

##	39	3.12	3	17966	Cana-de-Açúcar	2019-03-11
##	40	-1.14	3	17966	Cana-de-Açúcar	2019-03-11
##	41	-1.14	3	17966	Cana-de-Açúcar	2019-03-11
##	42	-2.13	3	17966	Cana-de-Açúcar	2019-03-11
##	43	-1.17	3	17966	Cana-de-Açúcar	2019-03-11
##	44	-2.74	3	17966	Cana-de-Açúcar	2019-03-11
##	45	-3.10	3	17966	Cana-de-Açúcar	2019-03-11
##	46	1.04	3	17966	Cana-de-Açúcar	2019-03-11
##	47	-0.591	3	17966	Cana-de-Açúcar	2019-03-11
##	48	1.18	3	17966	Cana-de-Açúcar	2019-03-11
##	49	2.48	3	17966	Cana-de-Açúcar	2019-03-11
##	50	-2.87	3	17966	Cana-de-Açúcar	2019-03-11
##	51	2.66	3	17966	Cana-de-Açúcar	2019-03-11
##	52	-1.98	3	17966	Cana-de-Açúcar	2019-03-11
##	53	1.78	3	17966	Cana-de-Açúcar	2019-03-11
##	54	0.340	3	17966	Cana-de-Açúcar	2019-03-11
##	55	-1.45	3	17966	Cana-de-Açúcar	2019-03-11
##	56	0.426	3	17966	Cana-de-Açúcar	2019-03-11
##	57	-0.175	3	17966	Cana-de-Açúcar	2019-03-11
##	58	0.807	3	17966	Cana-de-Açúcar	2019-03-11
##	59	0.941	3	17966	Cana-de-Açúcar	2019-03-11
##	60	0.385	3	17966	Cana-de-Açúcar	2019-03-11
##	61	1.23	3	17966	Cana-de-Açúcar	2019-03-11
##	62	0.816	3	17966	Cana-de-Açúcar	2019-03-11
##	63	1.25	3	17966	Cana-de-Açúcar	2019-03-11
##	64	1.35	3	17966	Cana-de-Açúcar	2019-03-11
##	65	1.37	3	17966	Cana-de-Açúcar	2019-03-11
##	66	-0.979	3	17966	Cana-de-Açúcar	2019-03-11
##	67	-0.526	3	17966	Cana-de-Açúcar	2019-03-11
##	68	0.775	3	17966	Cana-de-Açúcar	2019-03-11
##	69	-0.601	3	17966	Cana-de-Açúcar	2019-03-11
##	70	2.62	3	17966	Cana-de-Açúcar	2019-03-11
##	71	-1.90	3	17966	Cana-de-Açúcar	2019-03-11
##	72	-2.06	3	17966	Cana-de-Açúcar	2019-03-11
##	73	0.350	3	17966	Cana-de-Açúcar	2019-03-11
##	74	2.79	3	17966	Cana-de-Açúcar	2019-03-11
##	75	1.02	3	17966	Cana-de-Açúcar	2019-03-11
##	76	0.0625	3	17966	Cana-de-Açúcar	2019-03-11
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##	78	0.831	3	17966	Cana-de-Açúcar	2019-03-11
##	79	-0.802	3	17966	Cana-de-Açúcar	2019-03-11
##	80	0.0321	3	17966	Cana-de-Açúcar	2019-03-11
##	81	-0.438	3	17966	Cana-de-Açúcar	2019-03-11
##	82	1.81	3	17966	Cana-de-Açúcar	2019-03-11
##	83	2.97	3	17966	Cana-de-Açúcar	2019-03-11
##	84	0.790	3	17966	Cana-de-Açúcar	2019-03-11
##	85	2.71	3	17966	Cana-de-Açúcar	2019-03-11
##	86	-3.10	3	17966	Cana-de-Açúcar	2019-03-11
##	87	-2.94	3	17966	Cana-de-Açúcar	2019-03-11
##	88	2.44	3	17966	Cana-de-Açúcar	2019-03-11
##	89	0.465	3	17966	Cana-de-Açúcar	2019-03-11
##	90	-3.08	3	17966	Cana-de-Açúcar	2019-03-11
##	91	-2.79	3	17966	Cana-de-Açúcar	2019-03-11
##	92	0.422	3	17966	Cana-de-Açúcar	2019-03-11

##	93	0.244	3	18091	Cana-de-Açúcar	2019-07-14
##	94	0.401	3	18091	Cana-de-Açúcar	2019-07-14
##	95	-1.67	3	18091	Cana-de-Açúcar	2019-07-14
##	96	-2.90	3	18091	Cana-de-Açúcar	2019-07-14
##	97	0.524	3	18091	Cana-de-Açúcar	2019-07-14
##	98	2.07	3	18091	Cana-de-Açúcar	2019-07-14
##	99	-1.73	3	18091	Cana-de-Açúcar	2019-07-14
##	100	-0.163	3	18091	Cana-de-Açúcar	2019-07-14
##	101	2.37	3	18091	Cana-de-Açúcar	2019-07-14
##	102	1.11	3	18091	Cana-de-Açúcar	2019-07-14
##	103	-2.56	3	18091	Cana-de-Açúcar	2019-07-14
##	104	1.80	3	18091	Cana-de-Açúcar	2019-07-14
##	105	1.99	3	18091	Cana-de-Açúcar	2019-07-14
##	106	-2.54	3	18091	Cana-de-Açúcar	2019-07-14
##	107	0.317	3	18091	Cana-de-Açúcar	2019-07-14
##	108	0.842	3	18091	Cana-de-Açúcar	2019-07-14
##	109	2.00	3	18091	Cana-de-Açúcar	2019-07-14
##	110	3.02	3	18091	Cana-de-Açúcar	2019-07-14
##	111	-2.24	3	18091	Cana-de-Açúcar	2019-07-14
##	112	-1.42	3	18091	Cana-de-Açúcar	2019-07-14
##	113	0.331	3	18091	Cana-de-Açúcar	2019-07-14
##	114	0.0268	3	18091	Cana-de-Açúcar	2019-07-14
##	115	-1.43	3	18091	Cana-de-Açúcar	2019-07-14
##	116	1.71	3	18091	Cana-de-Açúcar	2019-07-14
##	117	0.756	3	18091	Cana-de-Açúcar	2019-07-14
##	118	-2.95	3	18091	Cana-de-Açúcar	2019-07-14
##	119	-0.202	3	18091	Cana-de-Açúcar	2019-07-14
##	120	1.58	3	18091	Cana-de-Açúcar	2019-07-14
##	121	-2.52	3	18091	Cana-de-Açúcar	2019-07-14
##	122	1.47	3	18091	Cana-de-Açúcar	2019-07-14
##	123	1.29	3	18091	Cana-de-Açúcar	2019-07-14
##	124	-0.514	3	18091	Cana-de-Açúcar	2019-07-14
##	125	-1.94	3	18091	Cana-de-Açúcar	2019-07-14
##	126	-1.48	3	18091	Cana-de-Açúcar	2019-07-14
##	127	0.279	3	18091	Cana-de-Açúcar	2019-07-14
##	128	2.92	3	18091	Cana-de-Açúcar	2019-07-14
##	129	-1.95	3	18091	Cana-de-Açúcar	2019-07-14
##	130	-0.177	3	18091	Cana-de-Açúcar	2019-07-14
##	131	0.297	3	18091	Cana-de-Açúcar	2019-07-14
##	132	-2.64	3	18091	Cana-de-Açúcar	2019-07-14
##	133	2.98	3	18091	Cana-de-Açúcar	2019-07-14
##	134	2.34	3	18091	Cana-de-Açúcar	2019-07-14
##	135	2.47	3	18091	Cana-de-Açúcar	2019-07-14
##	136	-1.91	3	18091	Cana-de-Açúcar	2019-07-14
##	137	1.40	3	18091	Cana-de-Açúcar	2019-07-14
##	138	-0.302	3	18091	Cana-de-Açúcar	2019-07-14
##	139	-0.235	3	18091	Cana-de-Açúcar	2019-07-14
##	140	-1.61	3	18091	Cana-de-Açúcar	2019-07-14
##	141	-1.72	3	18091	Cana-de-Açúcar	2019-07-14
##	142	2.80	3	18091	Cana-de-Açúcar	2019-07-14
##	143	-2.48	3	18091	Cana-de-Açúcar	2019-07-14
##	144	-0.0242	3	18091	Cana-de-Açúcar	2019-07-14
##	145	0.254	3	18091	Cana-de-Açúcar	2019-07-14
##	146	-1.53	3	18091	Cana-de-Açúcar	2019-07-14

##	147	-0.246	3	18091	Cana-de-Açúcar	2019-07-14
##	148	2.97	3	18091	Cana-de-Açúcar	2019-07-14
##	149	-2.67	3	18091	Cana-de-Açúcar	2019-07-14
##	150	-2.43	3	18091	Cana-de-Açúcar	2019-07-14
##	151	1.47	3	18091	Cana-de-Açúcar	2019-07-14
##	152	-2.19	3	18091	Cana-de-Açúcar	2019-07-14
##	153	0.363	3	18091	Cana-de-Açúcar	2019-07-14
##	154	0.0993	3	18091	Cana-de-Açúcar	2019-07-14
##	155	0.341	3	18091	Cana-de-Açúcar	2019-07-14
##	156	-2.88	3	18091	Cana-de-Açúcar	2019-07-14
##	157	2.52	3	18091	Cana-de-Açúcar	2019-07-14
##	158	-1.13	3	18091	Cana-de-Açúcar	2019-07-14
##	159	1.30	3	18091	Cana-de-Açúcar	2019-07-14
##	160	-0.146	3	18091	Cana-de-Açúcar	2019-07-14
##	161	0.902	3	18091	Cana-de-Açúcar	2019-07-14
##	162	0.214	3	18091	Cana-de-Açúcar	2019-07-14
##	163	3.13	3	18091	Cana-de-Açúcar	2019-07-14
##	164	-1.66	3	18091	Cana-de-Açúcar	2019-07-14
##	165	0.363	3	18091	Cana-de-Açúcar	2019-07-14
##	166	1.82	3	18091	Cana-de-Açúcar	2019-07-14
##	167	1.91	3	18091	Cana-de-Açúcar	2019-07-14
##	168	-0.634	3	18091	Cana-de-Açúcar	2019-07-14
##	169	2.51	3	18091	Cana-de-Açúcar	2019-07-14
##	170	1.39	3	18091	Cana-de-Açúcar	2019-07-14
##	171	3.12	3	18091	Cana-de-Açúcar	2019-07-14
##	172	3.07	3	18091	Cana-de-Açúcar	2019-07-14
##	173	0.0278	3	18091	Cana-de-Açúcar	2019-07-14
##	174	1.81	3	18091	Cana-de-Açúcar	2019-07-14
##	175	-2.09	3	18091	Cana-de-Açúcar	2019-07-14
##	176	-1.92	3	18091	Cana-de-Açúcar	2019-07-14
##	177	-1.67	3	18091	Cana-de-Açúcar	2019-07-14
##	178	1.18	3	18091	Cana-de-Açúcar	2019-07-14
##	179	0.308	3	18091	Cana-de-Açúcar	2019-07-14
##	180	3.07	3	18091	Cana-de-Açúcar	2019-07-14
##	181	1.72	3	18091	Cana-de-Açúcar	2019-07-14
##	182	-0.665	3	18091	Cana-de-Açúcar	2019-07-14
##	183	0.703	3	18091	Cana-de-Açúcar	2019-07-14
##	184	3.05	3	18091	Cana-de-Açúcar	2019-07-14
##	185	-0.0379	3	18091	Cana-de-Açúcar	2019-07-14
##	186	-0.934	3	18091	Cana-de-Açúcar	2019-07-14
##	187	2.18	3	18091	Cana-de-Açúcar	2019-07-14
##	188	2.70	3	18091	Cana-de-Açúcar	2019-07-14
##	189	0.532	3	18091	Cana-de-Açúcar	2019-07-14
##	190	-1.72	3	18091	Cana-de-Açúcar	2019-07-14
##	191	-0.238	3	18091	Cana-de-Açúcar	2019-07-14
##	192	2.81	3	18091	Cana-de-Açúcar	2019-07-14
##	193	1.59	3	18091	Cana-de-Açúcar	2019-07-14
##	194	-2.37	3	18091	Cana-de-Açúcar	2019-07-14
##	195	-1.38	3	18091	Cana-de-Açúcar	2019-07-14
##	196	2.43	3	18091	Cana-de-Açúcar	2019-07-14
##	197	-0.178	3	18091	Cana-de-Açúcar	2019-07-14
##	198	-3.08	3	18091	Cana-de-Açúcar	2019-07-14
##	199	-1.23	3	18091	Cana-de-Açúcar	2019-07-14
##	200	-1.54	3	18091	Cana-de-Açúcar	2019-07-14

##	201	1.06	3	18091	Cana-de-Açúcar	2019-07-14
##	202	-3.03	3	18091	Cana-de-Açúcar	2019-07-14
##	203	1.15	3	18091	Cana-de-Açúcar	2019-07-14
##	204	0.829	3	18091	Cana-de-Açúcar	2019-07-14
##	205	-0.204	3	18091	Cana-de-Açúcar	2019-07-14
##	206	-1.42	3	18091	Cana-de-Açúcar	2019-07-14
##	207	2.84	3	18091	Cana-de-Açúcar	2019-07-14
##	208	-2.95	3	18091	Cana-de-Açúcar	2019-07-14
##	209	-0.384	3	18091	Cana-de-Açúcar	2019-07-14
##	210	2.71	3	18091	Cana-de-Açúcar	2019-07-14
##	211	1.75	3	18091	Cana-de-Açúcar	2019-07-14
##	212	-2.46	3	18091	Cana-de-Açúcar	2019-07-14
##	213	-1.02	3	18091	Cana-de-Açúcar	2019-07-14
##	214	2.49	3	18091	Cana-de-Açúcar	2019-07-14
##	215	1.38	3	18091	Cana-de-Açúcar	2019-07-14
##	216	0.217	3	18091	Cana-de-Açúcar	2019-07-14
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##	218	1.06	3	18091	Cana-de-Açúcar	2019-07-14
##	219	-1.21	3	18091	Cana-de-Açúcar	2019-07-14
##	220	1.41	3	18091	Cana-de-Açúcar	2019-07-14
##	221	-0.754	3	18091	Cana-de-Açúcar	2019-07-14
##	222	0.962	3	18091	Cana-de-Açúcar	2019-07-14
##	223	1.72	3	18091	Cana-de-Açúcar	2019-07-14
##	224	-0.0992	3	17966	Cana-de-Açúcar	2019-03-11
##	225	-0.355	3	18091	Cana-de-Açúcar	2019-07-14
##	226	0.409	3	18091	Cana-de-Açúcar	2019-07-14
##	227	1.38	3	17966	Cana-de-Açúcar	2019-03-11
##	228	-0.235	3	17966	Cana-de-Açúcar	2019-03-11
##	229	-0.418	3	17966	Cana-de-Açúcar	2019-03-11
##	230	-0.730	3	17966	Cana-de-Açúcar	2019-03-11
##	231	-2.19	3	17966	Cana-de-Açúcar	2019-03-11
##	232	-1.46	3	17966	Cana-de-Açúcar	2019-03-11
##	233	-2.10	3	17966	Cana-de-Açúcar	2019-03-11
##	234	-2.36	3	17966	Cana-de-Açúcar	2019-03-11
##	235	-3.11	3	17966	Cana-de-Açúcar	2019-03-11
##	236	1.56	6	18077	Milho - Safrinha	2019-06-30
##	237	2.22	6	18077	Milho - Safrinha	2019-06-30
##	238	1.51	3	18030	Cana-de-Açúcar	2019-05-14
##	239	-0.867	3	18030	Cana-de-Açúcar	2019-05-14
##	240	1.54	3	18030	Cana-de-Açúcar	2019-05-14
##	241	-0.775	3	18030	Cana-de-Açúcar	2019-05-14
##	242	-0.987	3	18030	Cana-de-Açúcar	2019-05-14
##	243	-0.812	3	18030	Cana-de-Açúcar	2019-05-14
##	244	-0.830	3	18030	Cana-de-Açúcar	2019-05-14
##	245	0.775	3	18030	Cana-de-Açúcar	2019-05-14
##	246	0.171	3	18030	Cana-de-Açúcar	2019-05-14
##	247	-0.576	3	18030	Cana-de-Açúcar	2019-05-14
##	248	-0.228	3	18030	Cana-de-Açúcar	2019-05-14
##	249	0.847	3	18030	Cana-de-Açúcar	2019-05-14
##	250	2.86	3	18030	Cana-de-Açúcar	2019-05-14
##	251	2.38	3	18030	Cana-de-Açúcar	2019-05-14
##	252	-2.06	6	18075	Milho - Safrinha	2019-06-28
##	253	2.39	3	18016	Cana-de-Açúcar	2019-04-30
##	254	-1.21	3	18030	Cana-de-Açúcar	2019-05-14

##	255	0.187	6	18075	Milho - Safrinha	2019-06-28
##	256	-1.44	3	18027	Cana-de-Açúcar	2019-05-11
##	257	-0.342	3	18030	Cana-de-Açúcar	2019-05-14
##	258	-1.32	3	18027	Cana-de-Açúcar	2019-05-11
##	259	0.769	3	18030	Cana-de-Açúcar	2019-05-14
##	260	-1.14	3	18030	Cana-de-Açúcar	2019-05-14
##	261	2.39	3	18030	Cana-de-Açúcar	2019-05-14
##	262	2.69	3	18030	Cana-de-Açúcar	2019-05-14
##	263	1.89	3	18030	Cana-de-Açúcar	2019-05-14
##	264	-1.57	3	18030	Cana-de-Açúcar	2019-05-14
##	265	-1.25	3	18030	Cana-de-Açúcar	2019-05-14
##	266	-2.13	3	18016	Cana-de-Açúcar	2019-04-30
##	267	-2.62	6	18075	Milho - Safrinha	2019-06-28
##	268	1.30	3	17966	Cana-de-Açúcar	2019-03-11
##	269	1.81	3	17966	Cana-de-Açúcar	2019-03-11
##	270	2.16	3	17966	Cana-de-Açúcar	2019-03-11
##	271	2.88	3	17966	Cana-de-Açúcar	2019-03-11
##	272	2.90	3	17966	Cana-de-Açúcar	2019-03-11
##	273	-1.10	3	17966	Cana-de-Açúcar	2019-03-11
##	274	1.19	3	17966	Cana-de-Açúcar	2019-03-11
##	275	1.36	3	17966	Cana-de-Açúcar	2019-03-11
##	276	-0.178	3	17966	Cana-de-Açúcar	2019-03-11
##	277	0.581	3	17966	Cana-de-Açúcar	2019-03-11
##	278	-1.12	3	17966	Cana-de-Açúcar	2019-03-11
##	279	2.53	3	17966	Cana-de-Açúcar	2019-03-11
##	280	1.22	3	17966	Cana-de-Açúcar	2019-03-11
##	281	-2.26	3	17966	Cana-de-Açúcar	2019-03-11
##	282	-0.375	3	17966	Cana-de-Açúcar	2019-03-11
##	283	2.01	3	17966	Cana-de-Açúcar	2019-03-11
##	284	1.02	3	17966	Cana-de-Açúcar	2019-03-11
##	285	1.50	3	17966	Cana-de-Açúcar	2019-03-11
##	286	-1.21	3	17966	Cana-de-Açúcar	2019-03-11
##	287	1.85	3	17966	Cana-de-Açúcar	2019-03-11
##	288	2.12	3	17966	Cana-de-Açúcar	2019-03-11
##	289	1.44	3	17966	Cana-de-Açúcar	2019-03-11
##	290	1.42	3	17966	Cana-de-Açúcar	2019-03-11
##	291	-1.18	3	17966	Cana-de-Açúcar	2019-03-11
##	292	-1.08	3	17966	Cana-de-Açúcar	2019-03-11
##	293	1.04	3	17966	Cana-de-Açúcar	2019-03-11
##	294	-1.84	3	17966	Cana-de-Açúcar	2019-03-11
##	295	-2.15	3	17966	Cana-de-Açúcar	2019-03-11
##	296	-0.0585	3	17966	Cana-de-Açúcar	2019-03-11
##	297	-0.944	3	17966	Cana-de-Açúcar	2019-03-11
##	298	-1.33	3	17966	Cana-de-Açúcar	2019-03-11
##	299	-0.839	3	17966	Cana-de-Açúcar	2019-03-11
##	300	1.66	3	17966	Cana-de-Açúcar	2019-03-11
##	301	3.10	3	17966	Cana-de-Açúcar	2019-03-11
##	302	-1.01	3	17966	Cana-de-Açúcar	2019-03-11
##	303	0.282	3	17966	Cana-de-Açúcar	2019-03-11
##	304	-1.34	3	17966	Cana-de-Açúcar	2019-03-11
##	305	-0.283	3	17966	Cana-de-Açúcar	2019-03-11
##	306	2.32	3	17966	Cana-de-Açúcar	2019-03-11
##	307	1.96	3	17966	Cana-de-Açúcar	2019-03-11
##	308	1.11	3	17966	Cana-de-Açúcar	2019-03-11

##	309	-0.557	3	17966	Cana-de-Açúcar	2019-03-11
##	310	-0.0288	3	17966	Cana-de-Açúcar	2019-03-11
##	311	1.33	3	17966	Cana-de-Açúcar	2019-03-11
##	312	2.71	3	17966	Cana-de-Açúcar	2019-03-11
##	313	0.834	3	17966	Cana-de-Açúcar	2019-03-11
##	314	-0.789	3	17966	Cana-de-Açúcar	2019-03-11
##	315	-0.941	3	17966	Cana-de-Açúcar	2019-03-11
##	316	-0.759	3	17966	Cana-de-Açúcar	2019-03-11
##	317	-0.905	3	17966	Cana-de-Açúcar	2019-03-11
##	318	0.676	3	17966	Cana-de-Açúcar	2019-03-11
##	319	-1.42	3	17966	Cana-de-Açúcar	2019-03-11
##	320	-0.375	3	17966	Cana-de-Açúcar	2019-03-11
##	321	2.43	3	17966	Cana-de-Açúcar	2019-03-11
##	322	0.956	3	17966	Cana-de-Açúcar	2019-03-11
##	323	0.554	3	17966	Cana-de-Açúcar	2019-03-11
##	324	-0.961	3	17966	Cana-de-Açúcar	2019-03-11
##	325	-1.94	3	17966	Cana-de-Açúcar	2019-03-11
##	326	-1.35	3	17966	Cana-de-Açúcar	2019-03-11
##	327	-0.653	3	17966	Cana-de-Açúcar	2019-03-11
##	328	-0.274	3	17966	Cana-de-Açúcar	2019-03-11
##	329	-1.19	3	17966	Cana-de-Açúcar	2019-03-11
##	330	-0.436	3	17966	Cana-de-Açúcar	2019-03-11
##	331	1.93	3	17966	Cana-de-Açúcar	2019-03-11
##	332	0.802	3	17966	Cana-de-Açúcar	2019-03-11
##	333	1.21	3	17966	Cana-de-Açúcar	2019-03-11
##	334	-0.447	3	17966	Cana-de-Açúcar	2019-03-11
##	335	-1.18	3	17966	Cana-de-Açúcar	2019-03-11
##	336	0.195	3	17966	Cana-de-Açúcar	2019-03-11
##	337	-2.02	3	17966	Cana-de-Açúcar	2019-03-11
##	338	-1.51	3	17966	Cana-de-Açúcar	2019-03-11
##	339	-1.10	3	17966	Cana-de-Açúcar	2019-03-11
##	340	2.25	3	17966	Cana-de-Açúcar	2019-03-11
##	341	-2.80	3	17966	Cana-de-Açúcar	2019-03-11
##	342	0.102	3	17966	Cana-de-Açúcar	2019-03-11
##	343	-1.05	3	17966	Cana-de-Açúcar	2019-03-11
##	344	-1.70	3	17966	Cana-de-Açúcar	2019-03-11
##	345	-1.19	3	17966	Cana-de-Açúcar	2019-03-11
##	346	0.150	6	18081	Milho - Safrinha	2019-07-04
##	347	-0.445	6	18081	Milho - Safrinha	2019-07-04
##	348	-0.226	6	18081	Milho - Safrinha	2019-07-04
##	349	-1.79	6	18081	Milho - Safrinha	2019-07-04
##	350	-1.49	6	18081	Milho - Safrinha	2019-07-04
##	351	2.58	6	18081	Milho - Safrinha	2019-07-04
##	352	-0.163	6	18081	Milho - Safrinha	2019-07-04
##	353	0.285	6	18081	Milho - Safrinha	2019-07-04
##	354	2.44	6	18081	Milho - Safrinha	2019-07-04
##	355	1.92	6	18081	Milho - Safrinha	2019-07-04
##	356	-2.72	6	18081	Milho - Safrinha	2019-07-04
##	357	0.0719	3	17995	Cana-de-Açúcar	2019-04-09
##	358	-2.17	3	17995	Cana-de-Açúcar	2019-04-09
##	359	-1.68	3	17995	Cana-de-Açúcar	2019-04-09
##	360	-0.459	3	17995	Cana-de-Açúcar	2019-04-09
##	361	2.08	3	17966	Cana-de-Açúcar	2019-03-11
##	362	2.32	3	17966	Cana-de-Açúcar	2019-03-11

##	363	2.29	3	17966	Cana-de-Açúcar	2019-03-11
##	364	-2.22	3	17995	Cana-de-Açúcar	2019-04-09
##	365	1.70	3	17995	Cana-de-Açúcar	2019-04-09
##	366	1.24	3	18026	Cana-de-Açúcar	2019-05-10
##	367	-2.68	3	17966	Cana-de-Açúcar	2019-03-11
##	368	0.927	3	18091	Cana-de-Açúcar	2019-07-14
##	369	0.170	3	18091	Cana-de-Açúcar	2019-07-14
##	370	2.71	3	18091	Cana-de-Açúcar	2019-07-14
##	371	-0.469	3	17966	Cana-de-Açúcar	2019-03-11
##	372	0.734	3	17966	Cana-de-Açúcar	2019-03-11
##	373	-0.604	3	17966	Cana-de-Açúcar	2019-03-11
##	374	0.554	3	17966	Cana-de-Açúcar	2019-03-11
##	375	2.95	3	17966	Cana-de-Açúcar	2019-03-11
##	376	3.01	3	17966	Cana-de-Açúcar	2019-03-11
##	377	-2.89	3	17966	Cana-de-Açúcar	2019-03-11
##	378	-3.11	3	17966	Cana-de-Açúcar	2019-03-11
##	379	0.450	3	17966	Cana-de-Açúcar	2019-03-11
##	380	-1.55	3	17966	Cana-de-Açúcar	2019-03-11
##	381	2.20	3	17966	Cana-de-Açúcar	2019-03-11
##	382	-1.96	3	17966	Cana-de-Açúcar	2019-03-11
##	383	-1.22	3	17966	Cana-de-Açúcar	2019-03-11
##	384	-2.97	3	17966	Cana-de-Açúcar	2019-03-11
##	385	1.07	3	17966	Cana-de-Açúcar	2019-03-11
##	386	-0.434	3	17966	Cana-de-Açúcar	2019-03-11
##	387	-2.28	3	17966	Cana-de-Açúcar	2019-03-11
##	388	0.824	3	17966	Cana-de-Açúcar	2019-03-11
##	389	1.88	3	17966	Cana-de-Açúcar	2019-03-11
##	390	0.198	3	17966	Cana-de-Açúcar	2019-03-11
##	391	-1.88	3	17966	Cana-de-Açúcar	2019-03-11
##	392	0.0740	3	17966	Cana-de-Açúcar	2019-03-11
##	393	0.196	3	17966	Cana-de-Açúcar	2019-03-11
##	394	-0.304	3	17966	Cana-de-Açúcar	2019-03-11
##	395	-0.191	3	17966	Cana-de-Açúcar	2019-03-11
##	396	-1.66	3	17966	Cana-de-Açúcar	2019-03-11
##	397	0.383	3	17966	Cana-de-Açúcar	2019-03-11
##	398	-0.454	3	17966	Cana-de-Açúcar	2019-03-11
##	399	2.45	3	17966	Cana-de-Açúcar	2019-03-11
##	400	-2.04	3	17966	Cana-de-Açúcar	2019-03-11
##	401	-2.27	3	17966	Cana-de-Açúcar	2019-03-11
##	402	3.13	3	17966	Cana-de-Açúcar	2019-03-11
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##	404	0.353	3	17966	Cana-de-Açúcar	2019-03-11
##	405	-1.76	3	17966	Cana-de-Açúcar	2019-03-11
##	406	-0.0242	3	17966	Cana-de-Açúcar	2019-03-11
##	407	-0.120	3	17966	Cana-de-Açúcar	2019-03-11
##	408	1.53	3	17966	Cana-de-Açúcar	2019-03-11
##	409	1.18	3	17966	Cana-de-Açúcar	2019-03-11
##	410	-0.915	3	17966	Cana-de-Açúcar	2019-03-11
##	411	1.08	3	17966	Cana-de-Açúcar	2019-03-11
##	412	3.03	3	17966	Cana-de-Açúcar	2019-03-11
##	413	-2.72	3	17966	Cana-de-Açúcar	2019-03-11
##	414	-0.177	3	17966	Cana-de-Açúcar	2019-03-11
##	415	1.63	3	17966	Cana-de-Açúcar	2019-03-11
##	416	0.132	3	17966	Cana-de-Açúcar	2019-03-11

##	417	0.0530	3	17966	Cana-de-Açúcar	2019-03-11
##	418	-2.82	3	17966	Cana-de-Açúcar	2019-03-11
##	419	-2.59	3	17966	Cana-de-Açúcar	2019-03-11
##	420	-1.02	3	17966	Cana-de-Açúcar	2019-03-11
##	421	2.43	3	17966	Cana-de-Açúcar	2019-03-11
##	422	0.0929	3	17966	Cana-de-Açúcar	2019-03-11
##	423	-0.733	3	17966	Cana-de-Açúcar	2019-03-11
##	424	-1.24	3	17966	Cana-de-Açúcar	2019-03-11
##	425	0.297	3	17966	Cana-de-Açúcar	2019-03-11
##	426	-1.29	3	17966	Cana-de-Açúcar	2019-03-11
##	427	-1.24	3	17966	Cana-de-Açúcar	2019-03-11
##	428	-2.04	3	17966	Cana-de-Açúcar	2019-03-11
##	429	-1.01	3	17966	Cana-de-Açúcar	2019-03-11
##	430	2.97	3	17966	Cana-de-Açúcar	2019-03-11
##	431	-0.110	3	17966	Cana-de-Açúcar	2019-03-11
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##	433	-2.89	3	17966	Cana-de-Açúcar	2019-03-11
##	434	0.317	3	17966	Cana-de-Açúcar	2019-03-11
##	435	-0.384	3	17966	Cana-de-Açúcar	2019-03-11
##	436	2.88	3	17966	Cana-de-Açúcar	2019-03-11
##	437	0.441	3	17966	Cana-de-Açúcar	2019-03-11
##	438	0.288	3	17966	Cana-de-Açúcar	2019-03-11
##	439	1.42	3	17995	Cana-de-Açúcar	2019-04-09
##	440	2.47	3	17966	Cana-de-Açúcar	2019-03-11
##	441	-2.95	3	17966	Cana-de-Açúcar	2019-03-11
##	442	2.79	3	17966	Cana-de-Açúcar	2019-03-11
##	443	-2.90	3	17966	Cana-de-Açúcar	2019-03-11
##	444	1.82	3	17966	Cana-de-Açúcar	2019-03-11
##	445	1.74	3	17966	Cana-de-Açúcar	2019-03-11
##	446	-0.611	3	17966	Cana-de-Açúcar	2019-03-11
##	447	-2.44	3	17966	Cana-de-Açúcar	2019-03-11
##	448	-1.53	3	17966	Cana-de-Açúcar	2019-03-11
##	449	1.74	3	17966	Cana-de-Açúcar	2019-03-11
##	450	0.763	3	17966	Cana-de-Açúcar	2019-03-11
##	451	3.05	3	17966	Cana-de-Açúcar	2019-03-11
##	452	-0.957	3	18091	Cana-de-Açúcar	2019-07-14
##	453	2.20	3	18091	Cana-de-Açúcar	2019-07-14
##	454	1.49	3	17966	Cana-de-Açúcar	2019-03-11
##	455	-0.556	3	18091	Cana-de-Açúcar	2019-07-14
##	456	3.02	3	18091	Cana-de-Açúcar	2019-07-14
##	457	-2.45	3	18091	Cana-de-Açúcar	2019-07-14
##	458	2.54	3	18091	Cana-de-Açúcar	2019-07-14
##	459	1.80	3	17966	Cana-de-Açúcar	2019-03-11
##	460	-0.0711	3	17966	Cana-de-Açúcar	2019-03-11
##	461	0.733	3	17966	Cana-de-Açúcar	2019-03-11
##	462	-0.935	3	17966	Cana-de-Açúcar	2019-03-11
##	463	0.761	3	17966	Cana-de-Açúcar	2019-03-11
##	464	-1.89	3	17966	Cana-de-Açúcar	2019-03-11
##	465	0.870	3	17966	Cana-de-Açúcar	2019-03-11
##	466	-0.256	3	17966	Cana-de-Açúcar	2019-03-11
##	467	-0.531	3	17966	Cana-de-Açúcar	2019-03-11
##	468	0.464	3	17966	Cana-de-Açúcar	2019-03-11
##	469	-0.747	3	17966	Cana-de-Açúcar	2019-03-11
##	470	-2.51	3	17966	Cana-de-Açúcar	2019-03-11

##	471	-0.660	3	17966	Cana-de-Açúcar	2019-03-11
##	472	0.109	3	17966	Cana-de-Açúcar	2019-03-11
##	473	-0.538	3	17966	Cana-de-Açúcar	2019-03-11
##	474	-1.07	3	17966	Cana-de-Açúcar	2019-03-11
##	475	-0.414	3	17966	Cana-de-Açúcar	2019-03-11
##	476	-0.949	3	17966	Cana-de-Açúcar	2019-03-11
##	477	-2.52	3	17966	Cana-de-Açúcar	2019-03-11
##	478	-1.31	3	17966	Cana-de-Açúcar	2019-03-11
##	479	1.92	3	17966	Cana-de-Açúcar	2019-03-11
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##	481	-1.59	3	17966	Cana-de-Açúcar	2019-03-11
##	482	0.0975	3	17966	Cana-de-Açúcar	2019-03-11
##	483	1.42	3	17966	Cana-de-Açúcar	2019-03-11
##	484	-2.17	3	17966	Cana-de-Açúcar	2019-03-11
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##	486	0.241	3	17966	Cana-de-Açúcar	2019-03-11
##	487	-1.27	3	17966	Cana-de-Açúcar	2019-03-11
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##	490	0.0891	3	18091	Cana-de-Açúcar	2019-07-14
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##	492	-1.32	3	18091	Cana-de-Açúcar	2019-07-14
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##	494	1.39	3	18091	Cana-de-Açúcar	2019-07-14
##	495	-0.320	3	18091	Cana-de-Açúcar	2019-07-14
##	496	0.485	3	18091	Cana-de-Açúcar	2019-07-14
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##	498	-2.38	3	18091	Cana-de-Açúcar	2019-07-14
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##	502	-0.0324	3	18091	Cana-de-Açúcar	2019-07-14
##	503	-2.49	3	18091	Cana-de-Açúcar	2019-07-14
##	504	-0.777	3	17966	Cana-de-Açúcar	2019-03-11
##	505	-2.19	3	17966	Cana-de-Açúcar	2019-03-11
##	506	-1.47	3	17966	Cana-de-Açúcar	2019-03-11
##	507	0.779	3	17966	Cana-de-Açúcar	2019-03-11
##	508	0.0527	3	18091	Cana-de-Açúcar	2019-07-14
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##	510	-2.92	3	18091	Cana-de-Açúcar	2019-07-14
##	511	1.99	3	18091	Cana-de-Açúcar	2019-07-14
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##	517	1.84	3	18091	Cana-de-Açúcar	2019-07-14
##	518	2.81	3	18091	Cana-de-Açúcar	2019-07-14
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##	520	1.89	3	18091	Cana-de-Açúcar	2019-07-14
##	521	-2.85	3	18091	Cana-de-Açúcar	2019-07-14
##	522	1.28	3	18091	Cana-de-Açúcar	2019-07-14
##	523	1.31	3	18091	Cana-de-Açúcar	2019-07-14
##	524	-2.06	3	17966	Cana-de-Açúcar	2019-03-11

##	525	-2.57	3	17966	Cana-de-Açúcar	2019-03-11
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##	547	1.62	3	17966	Cana-de-Açúcar	2019-03-11
##	548	3.14	3	17966	Cana-de-Açúcar	2019-03-11
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##	66 Solo Exposto	1.84
##	67 Solo Exposto	5.50
##	68 Solo Exposto	4.98
##	69 Solo Exposto	3.81
##	70 Solo Exposto	5.58
##	71 Solo Exposto	5.18
##	72 Solo Exposto	3.01
##	73 Solo Exposto	4.61
##	74 Solo Exposto	4.62
##	75 Solo Exposto	2.33
##	76 Solo Exposto	5.51
##	77 Solo Exposto	5.65
##	78 Solo Exposto	4.64
##	79 Solo Exposto	3.81
##	80 Solo Exposto	4.31
##	81 Solo Exposto	0.481
##	82 Solo Exposto	5.63
##	83 Solo Exposto	3.20
##	84 Solo Exposto	3.56
##	85 Solo Exposto	1.82
##	86 Solo Exposto	5.71
##	87 Solo Exposto	4.91
##	88 Solo Exposto	5.62
##	89 Solo Exposto	5.91
##	90 Solo Exposto	5.42
##	91 Solo Exposto	6.18
##	92 Solo Exposto	6.88
##	93 Cana-de-Açúcar	5.91
##	94 Cana-de-Açúcar	5.19
##	95 Cana-de-Açúcar	2.26
##	96 Cana-de-Açúcar	5.22
##	97 Cana-de-Açúcar	4.92
##	98 Cana-de-Açúcar	0.629
##	99 Cana-de-Açúcar	2.51
##	100 Cana-de-Açúcar	3.92
##	101 Cana-de-Açúcar	4.88
##	102 Cana-de-Açúcar	5.99
##	103 Cana-de-Açúcar	2.01
##	104 Cana-de-Açúcar	2.67
##	105 Cana-de-Açúcar	4.58
##	106 Cana-de-Açúcar	3.13
##	107 Cana-de-Açúcar	2.63
##	108 Cana-de-Açúcar	3.73
##	109 Cana-de-Açúcar	4.56
##	110 Cana-de-Açúcar	5.11
##	111 Cana-de-Açúcar	-0.497
##	112 Cana-de-Açúcar	3.90
##	113 Cana-de-Açúcar	3.11
##	114 Cana-de-Açúcar	1.31
##	115 Cana-de-Açúcar	-0.510
##	116 Cana-de-Açúcar	5.39

##	117	Cana-de-Açúcar	1.06
##	118	Cana-de-Açúcar	-1.60
##	119	Cana-de-Açúcar	3.51
##	120	Cana-de-Açúcar	4.78
##	121	Cana-de-Açúcar	3.07
##	122	Cana-de-Açúcar	4.30
##	123	Cana-de-Açúcar	1.75
##	124	Cana-de-Açúcar	1.93
##	125	Cana-de-Açúcar	3.61
##	126	Cana-de-Açúcar	3.63
##	127	Cana-de-Açúcar	5.43
##	128	Cana-de-Açúcar	1.17
##	129	Cana-de-Açúcar	3.52
##	130	Cana-de-Açúcar	3.32
##	131	Cana-de-Açúcar	5.60
##	132	Cana-de-Açúcar	2.06
##	133	Cana-de-Açúcar	1.99
##	134	Cana-de-Açúcar	5.32
##	135	Cana-de-Açúcar	3.85
##	136	Cana-de-Açúcar	3.02
##	137	Cana-de-Açúcar	3.99
##	138	Cana-de-Açúcar	5.35
##	139	Cana-de-Açúcar	2.97
##	140	Cana-de-Açúcar	2.76
##	141	Cana-de-Açúcar	-1.74
##	142	Cana-de-Açúcar	3.53
##	143	Cana-de-Açúcar	3.52
##	144	Cana-de-Açúcar	5.01
##	145	Cana-de-Açúcar	2.15
##	146	Cana-de-Açúcar	3.54
##	147	Cana-de-Açúcar	5.25
##	148	Cana-de-Açúcar	-1.01
##	149	Cana-de-Açúcar	4.56
##	150	Cana-de-Açúcar	2.72
##	151	Cana-de-Açúcar	3.87
##	152	Cana-de-Açúcar	3.94
##	153	Cana-de-Açúcar	3.99
##	154	Cana-de-Açúcar	2.29
##	155	Cana-de-Açúcar	3.24
##	156	Cana-de-Açúcar	4.45
##	157	Cana-de-Açúcar	3.60
##	158	Cana-de-Açúcar	0.707
##	159	Cana-de-Açúcar	0.272
##	160	Cana-de-Açúcar	1.21
##	161	Cana-de-Açúcar	6.00
##	162	Cana-de-Açúcar	-2.21
##	163	Cana-de-Açúcar	2.84
##	164	Cana-de-Açúcar	-1.94
##	165	Cana-de-Açúcar	3.30
##	166	Cana-de-Açúcar	5.75
##	167	Cana-de-Açúcar	2.33
##	168	Cana-de-Açúcar	4.40
##	169	Cana-de-Açúcar	2.97
##	170	Cana-de-Açúcar	4.16

##	171	Cana-de-Açúcar	3.87
##	172	Cana-de-Açúcar	5.95
##	173	Cana-de-Açúcar	2.93
##	174	Cana-de-Açúcar	3.97
##	175	Cana-de-Açúcar	-6.47
##	176	Cana-de-Açúcar	-0.163
##	177	Cana-de-Açúcar	2.30
##	178	Cana-de-Açúcar	3.97
##	179	Cana-de-Açúcar	5.12
##	180	Cana-de-Açúcar	5.91
##	181	Cana-de-Açúcar	5.14
##	182	Cana-de-Açúcar	3.52
##	183	Cana-de-Açúcar	5.14
##	184	Cana-de-Açúcar	-0.213
##	185	Cana-de-Açúcar	5.69
##	186	Cana-de-Açúcar	3.25
##	187	Cana-de-Açúcar	4.96
##	188	Cana-de-Açúcar	1.88
##	189	Cana-de-Açúcar	4.85
##	190	Cana-de-Açúcar	4.73
##	191	Cana-de-Açúcar	3.50
##	192	Cana-de-Açúcar	3.79
##	193	Cana-de-Açúcar	4.98
##	194	Cana-de-Açúcar	4.23
##	195	Cana-de-Açúcar	5.42
##	196	Cana-de-Açúcar	4.26
##	197	Cana-de-Açúcar	2.26
##	198	Cana-de-Açúcar	2.83
##	199	Cana-de-Açúcar	3.25
##	200	Cana-de-Açúcar	5.82
##	201	Cana-de-Açúcar	6.59
##	202	Cana-de-Açúcar	4.88
##	203	Cana-de-Açúcar	4.88
##	204	Cana-de-Açúcar	0.784
##	205	Cana-de-Açúcar	1.54
##	206	Cana-de-Açúcar	3.93
##	207	Cana-de-Açúcar	2.84
##	208	Cana-de-Açúcar	3.02
##	209	Cana-de-Açúcar	2.12
##	210	Cana-de-Açúcar	6.26
##	211	Cana-de-Açúcar	-0.249
##	212	Cana-de-Açúcar	5.15
##	213	Cana-de-Açúcar	3.00
##	214	Cana-de-Açúcar	5.18
##	215	Cana-de-Açúcar	5.08
##	216	Cana-de-Açúcar	1.21
##	217	Cana-de-Açúcar	5.26
##	218	Cana-de-Açúcar	3.86
##	219	Cana-de-Açúcar	2.30
##	220	Cana-de-Açúcar	3.25
##	221	Cana-de-Açúcar	2.97
##	222	Cana-de-Açúcar	4.62
##	223	Cana-de-Açúcar	5.29
##	224	Solo Exposto	5.63

##	225 Cana-de-Açúcar	6.50
##	226 Cana-de-Açúcar	6.10
##	227 Solo Exposto	6.13
##	228 Solo Exposto	5.92
##	229 Solo Exposto	7.05
##	230 Solo Exposto	6.75
##	231 Solo Exposto	4.57
##	232 Solo Exposto	5.29
##	233 Solo Exposto	5.62
##	234 Solo Exposto	5.08
##	235 Solo Exposto	6.48
##	236 Milho - Safrinha	5.95
##	237 Milho - Safrinha	6.34
##	238 Solo Exposto	6.52
##	239 Solo Exposto	3.93
##	240 Solo Exposto	1.80
##	241 Solo Exposto	4.12
##	242 Solo Exposto	0.993
##	243 Solo Exposto	5.00
##	244 Solo Exposto	5.69
##	245 Solo Exposto	-4.00
##	246 Solo Exposto	3.10
##	247 Solo Exposto	3.14
##	248 Solo Exposto	2.57
##	249 Solo Exposto	1.89
##	250 Solo Exposto	-1.03
##	251 Solo Exposto	4.33
##	252 Milho - Safrinha	5.85
##	253 Solo Exposto	6.32
##	254 Solo Exposto	5.76
##	255 Milho - Safrinha	6.55
##	256 Solo Exposto	6.84
##	257 Solo Exposto	4.52
##	258 Solo Exposto	6.52
##	259 Solo Exposto	5.02
##	260 Solo Exposto	4.17
##	261 Solo Exposto	5.98
##	262 Solo Exposto	4.60
##	263 Solo Exposto	5.12
##	264 Solo Exposto	5.13
##	265 Solo Exposto	5.08
##	266 Solo Exposto	6.24
##	267 Milho - Safrinha	6.37
##	268 Solo Exposto	7.14
##	269 Solo Exposto	5.37
##	270 Solo Exposto	5.59
##	271 Solo Exposto	6.67
##	272 Solo Exposto	4.51
##	273 Solo Exposto	4.81
##	274 Solo Exposto	4.31
##	275 Solo Exposto	-1.86
##	276 Solo Exposto	2.71
##	277 Solo Exposto	1.30
##	278 Solo Exposto	-0.863

##	279	Solo	Exposto	4.26
##	280	Solo	Exposto	5.25
##	281	Solo	Exposto	3.96
##	282	Solo	Exposto	3.75
##	283	Solo	Exposto	6.47
##	284	Solo	Exposto	3.91
##	285	Solo	Exposto	4.29
##	286	Solo	Exposto	3.94
##	287	Solo	Exposto	3.52
##	288	Solo	Exposto	4.35
##	289	Solo	Exposto	6.00
##	290	Solo	Exposto	6.62
##	291	Solo	Exposto	5.11
##	292	Solo	Exposto	5.68
##	293	Solo	Exposto	5.06
##	294	Solo	Exposto	4.61
##	295	Solo	Exposto	4.81
##	296	Solo	Exposto	5.36
##	297	Solo	Exposto	6.18
##	298	Solo	Exposto	5.09
##	299	Solo	Exposto	6.56
##	300	Solo	Exposto	6.37
##	301	Solo	Exposto	5.39
##	302	Solo	Exposto	6.06
##	303	Solo	Exposto	4.75
##	304	Solo	Exposto	4.61
##	305	Solo	Exposto	4.35
##	306	Solo	Exposto	5.30
##	307	Solo	Exposto	5.52
##	308	Solo	Exposto	5.82
##	309	Solo	Exposto	4.45
##	310	Solo	Exposto	5.64
##	311	Solo	Exposto	3.26
##	312	Solo	Exposto	6.44
##	313	Solo	Exposto	6.01
##	314	Solo	Exposto	6.08
##	315	Solo	Exposto	3.45
##	316	Solo	Exposto	4.90
##	317	Solo	Exposto	3.81
##	318	Solo	Exposto	4.19
##	319	Solo	Exposto	5.22
##	320	Solo	Exposto	5.82
##	321	Solo	Exposto	6.11
##	322	Solo	Exposto	4.96
##	323	Solo	Exposto	5.96
##	324	Solo	Exposto	4.89
##	325	Solo	Exposto	3.95
##	326	Solo	Exposto	3.36
##	327	Solo	Exposto	4.68
##	328	Solo	Exposto	4.41
##	329	Solo	Exposto	5.59
##	330	Solo	Exposto	4.67
##	331	Solo	Exposto	0.0752
##	332	Solo	Exposto	2.04

##	333 Solo Exposto	4.84
##	334 Solo Exposto	-0.650
##	335 Solo Exposto	3.17
##	336 Solo Exposto	-3.96
##	337 Solo Exposto	2.49
##	338 Solo Exposto	1.35
##	339 Solo Exposto	4.36
##	340 Solo Exposto	6.24
##	341 Solo Exposto	6.46
##	342 Solo Exposto	6.26
##	343 Solo Exposto	5.33
##	344 Solo Exposto	4.38
##	345 Solo Exposto	5.14
##	346 Milho - Safrinha	7.57
##	347 Milho - Safrinha	2.19
##	348 Milho - Safrinha	5.42
##	349 Milho - Safrinha	3.78
##	350 Milho - Safrinha	5.63
##	351 Milho - Safrinha	2.49
##	352 Milho - Safrinha	5.97
##	353 Milho - Safrinha	0.339
##	354 Milho - Safrinha	0.240
##	355 Milho - Safrinha	4.92
##	356 Milho - Safrinha	5.13
##	357 Solo Exposto	7.07
##	358 Solo Exposto	2.32
##	359 Solo Exposto	3.31
##	360 Solo Exposto	5.93
##	361 Solo Exposto	6.42
##	362 Solo Exposto	2.37
##	363 Solo Exposto	6.20
##	364 Solo Exposto	2.21
##	365 Solo Exposto	6.76
##	366 Solo Exposto	7.52
##	367 Solo Exposto	4.96
##	368 Cana-de-Açúcar	3.90
##	369 Cana-de-Açúcar	5.27
##	370 Cana-de-Açúcar	5.13
##	371 Cana-de-Açúcar	6.14
##	372 Cana-de-Açúcar	6.76
##	373 Cana-de-Açúcar	5.97
##	374 Cana-de-Açúcar	5.14
##	375 Cana-de-Açúcar	3.89
##	376 Cana-de-Açúcar	5.12
##	377 Cana-de-Açúcar	6.08
##	378 Cana-de-Açúcar	2.78
##	379 Cana-de-Açúcar	2.88
##	380 Cana-de-Açúcar	4.07
##	381 Cana-de-Açúcar	4.64
##	382 Cana-de-Açúcar	0.678
##	383 Cana-de-Açúcar	4.39
##	384 Cana-de-Açúcar	4.54
##	385 Cana-de-Açúcar	5.15
##	386 Cana-de-Açúcar	5.94

##	387	Cana-de-Açúcar	1.76
##	388	Cana-de-Açúcar	5.09
##	389	Cana-de-Açúcar	1.86
##	390	Cana-de-Açúcar	3.12
##	391	Cana-de-Açúcar	4.73
##	392	Cana-de-Açúcar	4.90
##	393	Cana-de-Açúcar	4.32
##	394	Cana-de-Açúcar	3.83
##	395	Cana-de-Açúcar	6.01
##	396	Cana-de-Açúcar	-0.0832
##	397	Cana-de-Açúcar	4.38
##	398	Cana-de-Açúcar	5.26
##	399	Cana-de-Açúcar	1.78
##	400	Cana-de-Açúcar	1.55
##	401	Cana-de-Açúcar	4.56
##	402	Cana-de-Açúcar	1.56
##	403	Cana-de-Açúcar	4.12
##	404	Cana-de-Açúcar	6.67
##	405	Cana-de-Açúcar	0.350
##	406	Cana-de-Açúcar	2.00
##	407	Cana-de-Açúcar	5.51
##	408	Cana-de-Açúcar	0.832
##	409	Cana-de-Açúcar	4.57
##	410	Cana-de-Açúcar	5.96
##	411	Cana-de-Açúcar	2.45
##	412	Cana-de-Açúcar	4.35
##	413	Cana-de-Açúcar	3.92
##	414	Cana-de-Açúcar	6.62
##	415	Cana-de-Açúcar	-0.249
##	416	Cana-de-Açúcar	5.33
##	417	Cana-de-Açúcar	2.27
##	418	Cana-de-Açúcar	4.25
##	419	Cana-de-Açúcar	5.02
##	420	Cana-de-Açúcar	6.16
##	421	Cana-de-Açúcar	1.84
##	422	Cana-de-Açúcar	1.03
##	423	Cana-de-Açúcar	6.98
##	424	Cana-de-Açúcar	3.48
##	425	Cana-de-Açúcar	3.70
##	426	Cana-de-Açúcar	4.98
##	427	Cana-de-Açúcar	4.79
##	428	Cana-de-Açúcar	6.02
##	429	Cana-de-Açúcar	5.19
##	430	Cana-de-Açúcar	3.16
##	431	Cana-de-Açúcar	3.44
##	432	Cana-de-Açúcar	2.39
##	433	Cana-de-Açúcar	5.32
##	434	Cana-de-Açúcar	3.32
##	435	Cana-de-Açúcar	3.55
##	436	Cana-de-Açúcar	-0.396
##	437	Cana-de-Açúcar	5.33
##	438	Cana-de-Açúcar	4.56
##	439	Solo Exposto	5.93
##	440	Cana-de-Açúcar	4.61

##	441	Cana-de-Açúcar	3.61
##	442	Cana-de-Açúcar	3.64
##	443	Cana-de-Açúcar	4.88
##	444	Cana-de-Açúcar	5.92
##	445	Cana-de-Açúcar	6.04
##	446	Cana-de-Açúcar	6.65
##	447	Cana-de-Açúcar	6.22
##	448	Cana-de-Açúcar	6.09
##	449	Cana-de-Açúcar	6.29
##	450	Cana-de-Açúcar	5.41
##	451	Cana-de-Açúcar	6.36
##	452	Cana-de-Açúcar	6.61
##	453	Cana-de-Açúcar	6.26
##	454	Cana-de-Açúcar	6.52
##	455	Cana-de-Açúcar	6.82
##	456	Cana-de-Açúcar	2.76
##	457	Cana-de-Açúcar	3.54
##	458	Cana-de-Açúcar	6.38
##	459	Cana-de-Açúcar	6.95
##	460	Cana-de-Açúcar	7.22
##	461	Cana-de-Açúcar	4.62
##	462	Cana-de-Açúcar	-1.20
##	463	Cana-de-Açúcar	5.04
##	464	Cana-de-Açúcar	4.39
##	465	Cana-de-Açúcar	0.681
##	466	Cana-de-Açúcar	4.53
##	467	Cana-de-Açúcar	5.59
##	468	Cana-de-Açúcar	4.82
##	469	Cana-de-Açúcar	5.72
##	470	Cana-de-Açúcar	2.40
##	471	Cana-de-Açúcar	5.69
##	472	Cana-de-Açúcar	0.501
##	473	Cana-de-Açúcar	2.37
##	474	Cana-de-Açúcar	4.23
##	475	Cana-de-Açúcar	5.42
##	476	Cana-de-Açúcar	6.42
##	477	Cana-de-Açúcar	2.33
##	478	Cana-de-Açúcar	4.90
##	479	Cana-de-Açúcar	5.25
##	480	Cana-de-Açúcar	5.28
##	481	Cana-de-Açúcar	5.40
##	482	Cana-de-Açúcar	5.57
##	483	Cana-de-Açúcar	5.40
##	484	Cana-de-Açúcar	5.64
##	485	Cana-de-Açúcar	6.42
##	486	Cana-de-Açúcar	6.85
##	487	Cana-de-Açúcar	6.53
##	488	Cana-de-Açúcar	6.36
##	489	Cana-de-Açúcar	6.44
##	490	Cana-de-Açúcar	6.26
##	491	Cana-de-Açúcar	2.07
##	492	Cana-de-Açúcar	0.907
##	493	Cana-de-Açúcar	4.01
##	494	Cana-de-Açúcar	4.60

##	495	Cana-de-Açúcar	2.53
##	496	Cana-de-Açúcar	5.73
##	497	Cana-de-Açúcar	-1.52
##	498	Cana-de-Açúcar	1.79
##	499	Cana-de-Açúcar	4.42
##	500	Cana-de-Açúcar	5.03
##	501	Cana-de-Açúcar	2.07
##	502	Cana-de-Açúcar	2.45
##	503	Cana-de-Açúcar	3.71
##	504	Cana-de-Açúcar	6.04
##	505	Cana-de-Açúcar	5.42
##	506	Cana-de-Açúcar	4.06
##	507	Cana-de-Açúcar	5.08
##	508	Cana-de-Açúcar	7.02
##	509	Cana-de-Açúcar	6.42
##	510	Cana-de-Açúcar	4.91
##	511	Cana-de-Açúcar	3.61
##	512	Cana-de-Açúcar	4.58
##	513	Cana-de-Açúcar	3.93
##	514	Cana-de-Açúcar	3.21
##	515	Cana-de-Açúcar	2.91
##	516	Cana-de-Açúcar	5.37
##	517	Cana-de-Açúcar	1.86
##	518	Cana-de-Açúcar	6.00
##	519	Cana-de-Açúcar	1.20
##	520	Cana-de-Açúcar	4.30
##	521	Cana-de-Açúcar	3.50
##	522	Cana-de-Açúcar	2.09
##	523	Cana-de-Açúcar	3.92
##	524	Cana-de-Açúcar	6.57
##	525	Cana-de-Açúcar	6.26
##	526	Cana-de-Açúcar	6.43
##	527	Cana-de-Açúcar	6.46
##	528	Cana-de-Açúcar	5.35
##	529	Cana-de-Açúcar	5.31
##	530	Cana-de-Açúcar	5.67
##	531	Cana-de-Açúcar	5.21
##	532	Cana-de-Açúcar	5.55
##	533	Cana-de-Açúcar	6.00
##	534	Cana-de-Açúcar	3.72
##	535	Cana-de-Açúcar	5.30
##	536	Cana-de-Açúcar	4.85
##	537	Cana-de-Açúcar	5.47
##	538	Cana-de-Açúcar	4.02
##	539	Cana-de-Açúcar	5.29
##	540	Cana-de-Açúcar	1.68
##	541	Cana-de-Açúcar	-0.0634
##	542	Cana-de-Açúcar	4.14
##	543	Cana-de-Açúcar	2.90
##	544	Cana-de-Açúcar	-0.597
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##	548	Cana-de-Açúcar	3.66

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##	552	Cana-de-Açúcar	5.19
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## # ... with 1 more row
```

```
d1 %>%
  dplyr::filter(as.character(classes.lev) != as.character(classes.corr)) %>%
  print(n = 1000)
```

```
## # A tibble: 264 x 18
##   burst_ step_id_ case_   x1_   y1_   x2_   y2_ t1_
## *   <dbl>   <int> <lgl> <dbl> <dbl> <dbl> <dbl> <dtm>
## 1     18     1272 TRUE  3.15e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:00:47
## 2     18     1272 FALSE 3.15e5 7.98e6 3.15e5 7.98e6 2019-05-05 16:00:47
## 3     18     1272 FALSE 3.15e5 7.98e6 3.15e5 7.98e6 2019-05-05 16:00:47
## 4     18     1272 FALSE 3.15e5 7.98e6 3.15e5 7.98e6 2019-05-05 16:00:47
## 5     18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 6     18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 7     18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 8     18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 9     18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 10    18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 11    18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 12    18     1273 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 16:30:35
## 13    18     1274 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-05-05 17:00:26
## 14    18     1278 FALSE 3.17e5 7.98e6 3.17e5 7.98e6 2019-05-05 19:00:47
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## 21    19     1282 FALSE 3.17e5 7.98e6 3.17e5 7.98e6 2019-05-05 22:30:32
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##	83	25	1412	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	00:30:05
##	84	25	1412	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	00:30:05
##	85	25	1413	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-09	01:00:08
##	86	25	1413	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	01:00:08
##	87	25	1413	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	01:00:08
##	88	25	1413	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	01:00:08
##	89	25	1413	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	01:00:08
##	90	25	1414	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	01:30:18
##	91	25	1416	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	02:30:46
##	92	25	1416	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	02:30:46
##	93	25	1416	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	02:30:46
##	94	25	1422	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-05-09	05:30:48
##	95	25	1435	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-05-09	12:01:30
##	96	26	1437	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-05-09	15:00:55
##	97	26	1442	FALSE	3.20e5	7.97e6	3.20e5	7.97e6	2019-05-09	17:31:31
##	98	26	1447	FALSE	3.20e5	7.97e6	3.19e5	7.98e6	2019-05-09	20:00:47
##	99	26	1454	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	23:30:11
##	100	26	1454	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	23:30:11
##	101	26	1454	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	23:30:11
##	102	26	1454	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-09	23:30:11
##	103	26	1454	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-09	23:30:11
##	104	26	1455	TRUE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:00:21
##	105	26	1455	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:00:21
##	106	26	1455	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:00:21
##	107	26	1455	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:00:21
##	108	26	1455	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:00:21
##	109	26	1456	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-10	00:30:46
##	110	26	1456	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:30:46
##	111	26	1456	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:30:46
##	112	26	1456	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:30:46
##	113	26	1456	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:30:46
##	114	26	1456	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	00:30:46
##	115	26	1457	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:00:47
##	116	26	1457	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:00:47
##	117	26	1457	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:00:47
##	118	26	1458	TRUE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:30:34
##	119	26	1458	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:30:34
##	120	26	1458	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:30:34
##	121	26	1458	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:30:34
##	122	26	1458	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-10	01:30:34
##	123	26	1458	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	01:30:34
##	124	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	125	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	126	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	127	26	1459	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-10	02:00:09
##	128	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	129	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	130	26	1459	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:00:09
##	131	26	1460	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:30:10
##	132	26	1460	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	02:30:10
##	133	26	1461	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	03:00:47
##	134	26	1462	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	03:30:25

## 135	26	1466	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	05:30:30
## 136	26	1467	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-10	06:00:48
## 137	26	1472	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-10	08:30:47
## 138	59	2113	FALSE	3.15e5	7.98e6	3.15e5	7.98e6	2019-05-26	00:30:38
## 139	61	2180	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-27	13:01:38
## 140	61	2182	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-27	14:01:00
## 141	65	2249	FALSE	3.21e5	7.98e6	3.19e5	7.98e6	2019-05-29	05:30:16
## 142	67	2344	FALSE	3.20e5	7.98e6	3.19e5	7.98e6	2019-05-31	08:30:08
## 143	67	2344	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-31	08:30:08
## 144	67	2345	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-31	09:00:08
## 145	67	2345	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-31	09:00:08
## 146	67	2345	FALSE	3.20e5	7.98e6	3.20e5	7.98e6	2019-05-31	09:00:08
## 147	67	2347	FALSE	3.20e5	7.97e6	3.20e5	7.98e6	2019-05-31	10:00:38
## 148	69	2367	TRUE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:00:11
## 149	69	2368	TRUE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:30:22
## 150	69	2368	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:30:22
## 151	69	2368	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:30:22
## 152	69	2368	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:30:22
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## 154	69	2368	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	00:30:22
## 155	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 156	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 157	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 158	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 159	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 160	69	2369	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:00:38
## 161	69	2370	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	01:30:47
## 162	69	2370	FALSE	3.19e5	7.97e6	3.18e5	7.97e6	2019-06-01	01:30:47
## 163	69	2371	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	02:00:46
## 164	69	2371	FALSE	3.19e5	7.97e6	3.18e5	7.97e6	2019-06-01	02:00:46
## 165	69	2371	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	02:00:46
## 166	69	2373	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	03:01:01
## 167	69	2374	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	03:30:12
## 168	69	2376	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	04:30:47
## 169	69	2377	FALSE	3.19e5	7.97e6	3.18e5	7.97e6	2019-06-01	05:00:48
## 170	69	2377	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	05:00:48
## 171	70	2380	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	08:00:47
## 172	70	2381	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	08:30:23
## 173	70	2383	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	09:30:47
## 174	70	2384	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	10:01:02
## 175	70	2388	FALSE	3.19e5	7.97e6	3.18e5	7.97e6	2019-06-01	12:00:49
## 176	70	2392	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-01	14:00:45
## 177	70	2392	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-01	14:00:45
## 178	70	2397	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-01	16:30:47
## 179	71	2407	TRUE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:00:47
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## 181	71	2407	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:00:47
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## 184	71	2407	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:00:47
## 185	71	2407	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:00:47
## 186	71	2407	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:00:47
## 187	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 188	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46

## 189	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 190	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.98e6	2019-06-01	23:30:46
## 191	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 192	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 193	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 194	71	2408	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-01	23:30:46
## 195	71	2409	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	00:00:47
## 196	71	2412	FALSE	3.20e5	7.97e6	3.20e5	7.98e6	2019-06-02	01:30:46
## 197	71	2413	FALSE	3.20e5	7.97e6	3.19e5	7.98e6	2019-06-02	02:00:47
## 198	71	2414	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	02:30:46
## 199	71	2414	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	02:30:46
## 200	71	2415	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	03:00:36
## 201	71	2417	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	04:00:46
## 202	71	2417	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	04:00:46
## 203	71	2420	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	05:30:47
## 204	71	2420	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	05:30:47
## 205	71	2420	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	05:30:47
## 206	71	2421	FALSE	3.20e5	7.97e6	3.20e5	7.98e6	2019-06-02	06:00:55
## 207	71	2422	FALSE	3.20e5	7.97e6	3.19e5	7.98e6	2019-06-02	06:30:33
## 208	71	2422	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	06:30:33
## 209	71	2423	FALSE	3.20e5	7.97e6	3.19e5	7.98e6	2019-06-02	07:00:47
## 210	71	2423	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	07:00:47
## 211	71	2424	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	07:30:21
## 212	71	2425	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	08:00:46
## 213	71	2426	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	08:30:47
## 214	71	2426	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	08:30:47
## 215	71	2427	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	09:00:46
## 216	71	2427	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	09:00:46
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## 218	71	2427	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	09:00:46
## 219	71	2438	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	14:31:00
## 220	72	2447	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	20:30:33
## 221	72	2449	FALSE	3.20e5	7.97e6	3.20e5	7.98e6	2019-06-02	21:30:48
## 222	72	2450	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	22:00:35
## 223	72	2450	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	22:00:35
## 224	72	2450	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	22:00:35
## 225	72	2450	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-02	22:00:35
## 226	72	2451	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-02	22:30:20
## 227	72	2458	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-03	02:00:47
## 228	72	2462	FALSE	3.20e5	7.97e6	3.19e5	7.97e6	2019-06-03	04:00:46
## 229	72	2498	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	22:00:09
## 230	72	2498	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	22:00:09
## 231	72	2498	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	22:00:09
## 232	72	2499	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	22:30:06
## 233	72	2500	TRUE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:00:09
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## 235	72	2500	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:00:09
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## 237	72	2500	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:00:09
## 238	72	2501	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:30:48
## 239	72	2501	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:30:48
## 240	72	2501	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:30:48
## 241	72	2501	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:30:48
## 242	72	2501	FALSE	3.19e5	7.97e6	3.19e5	7.97e6	2019-06-03	23:30:48

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## 243      72      2501 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-03 23:30:48
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## 245      72      2501 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-03 23:30:48
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## 247      72      2502 FALSE 3.19e5 7.97e6 3.20e5 7.98e6 2019-06-04 00:01:01
## 248      72      2502 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-04 00:01:01
## 249      72      2504 FALSE 3.20e5 7.97e6 3.19e5 7.98e6 2019-06-04 01:00:10
## 250      72      2505 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-04 01:30:08
## 251      72      2505 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-04 01:30:08
## 252      72      2505 FALSE 3.19e5 7.97e6 3.19e5 7.97e6 2019-06-04 01:30:08
## 253      73      2575 TRUE  3.14e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:00:47
## 254      73      2576 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:30:10
## 255      73      2576 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:30:10
## 256      73      2576 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:30:10
## 257      73      2576 FALSE 3.16e5 7.98e6 3.15e5 7.98e6 2019-06-05 15:30:10
## 258      73      2576 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:30:10
## 259      73      2576 FALSE 3.16e5 7.98e6 3.15e5 7.98e6 2019-06-05 15:30:10
## 260      73      2576 FALSE 3.16e5 7.98e6 3.16e5 7.98e6 2019-06-05 15:30:10
## 261      73      2577 FALSE 3.15e5 7.98e6 3.16e5 7.98e6 2019-06-05 16:00:37
## 262      73      2577 FALSE 3.15e5 7.98e6 3.16e5 7.97e6 2019-06-05 16:00:37
## 263      73      2578 FALSE 3.15e5 7.98e6 3.15e5 7.98e6 2019-06-05 16:30:25
## 264      74      2783 FALSE 3.17e5 7.98e6 3.17e5 7.98e6 2019-06-10 00:30:10
## # ... with 10 more variables: t2_ <dtm>, dt_ <drtn>, sl_ <dbl>,
## #   ta_ <dbl>, classes <dbl>, julian.date <dbl>, classes.lev <fct>,
## #   dtm.harvest <date>, classes.corr <fct>, log_sl_ <dbl>
```

```
# run models
```

```
m1 <- d1 %>%
```

```
  amt::fit_clogit(case_ ~ classes.corr + strata(step_id_))
```

```
m1
```

```
## $model
```

```
## Call:
```

```
## survival::clogit(formula, data = data, ...)
```

```
##
```

	coef	exp(coef)	se(coef)	z	p
## classes.corrCampo Seco	0.28852	1.33445	0.32072	0.900	0.368333
## classes.corrCampo Úmido	-0.07709	0.92580	0.38856	-0.198	0.842728
## classes.corrCana-de-Açúcar	1.14601	3.14562	0.30826	3.718	0.000201
## classes.corrMata de Galeria	1.77481	5.89913	0.43965	4.037	5.42e-05
## classes.corrMilho - Safrinha	1.32087	3.74670	0.30472	4.335	1.46e-05
## classes.corrSolo Exposto	0.45248	1.57221	0.34833	1.299	0.193950

```
##
```

```
## Likelihood ratio test=99.55 on 6 df, p=< 2.2e-16
```

```
## n= 43350, number of events= 4335
```

```
##
```

```
## $sl_
```

```
## $sl_$name
```

```
## [1] "gamma"
```

```
##
```

```
## $sl_$fit
```

```
## Fitting of the distribution ' gamma ' by maximum likelihood
```

```
## Parameters:
```

```
##      estimate Std. Error
```

```
## shape 0.53506085      NA
```

```

## rate 0.00458561      NA
##
##
## $ta_
## $ta_$name
## [1] "vonmises"
##
## $ta_$params
## [1] 0.1170425
##
## $ta_$fit
##
## Call:
## circular::mle.vonmises(x = x)
##
## mu: 0.2976 ( 0.1837 )
##
## kappa: 0.117 ( 0.02153 )
##
##
##
## $more
## NULL
##
## attr("class")
## [1] "fit_clogit" "list"

# m2 <- d1 %>%
#   amt::fit_clogit(case_ ~ classes.corr + log_sl_ + strata(step_id_))
# m2

#install.load::install_load('ResourceSelection')
# m1 <- ResourceSelection::rspf(case_ ~ classes.corr, data = d1, m = ifelse(d1$case_, 1, 2))
# m1

AIC(m1$model)

## [1] 19875.86

summary(m1)

## Call:
## coxph(formula = Surv(rep(1, 43350L), case_) ~ classes.corr +
##   strata(step_id_), data = data, method = "exact")
##
##   n= 43350, number of events= 4335
##
##               coef exp(coef) se(coef)      z Pr(>|z|)
## classes.corrCampo Seco      0.28852   1.33445  0.32072   0.900 0.368333
## classes.corrCampo Úmido    -0.07709   0.92580  0.38856  -0.198 0.842728
## classes.corrCana-de-Açúcar  1.14601   3.14562  0.30826   3.718 0.000201
## classes.corrMata de Galeria 1.77481   5.89913  0.43965   4.037 5.42e-05
## classes.corrMilho - Safrinha 1.32087   3.74670  0.30472   4.335 1.46e-05
## classes.corrSolo Exposto   0.45248   1.57221  0.34833   1.299 0.193950
##

```

```
## classes.corrCampo Seco
## classes.corrCampo Úmido
## classes.corrCana-de-Açúcar ***
## classes.corrMata de Galeria ***
## classes.corrMilho - Safrinha ***
## classes.corrSolo Exposto
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
##               exp(coef) exp(-coef) lower .95 upper .95
## classes.corrCampo Seco      1.3345    0.7494    0.7117    2.502
## classes.corrCampo Úmido      0.9258    1.0801    0.4323    1.983
## classes.corrCana-de-Açúcar    3.1456    0.3179    1.7192    5.756
## classes.corrMata de Galeria    5.8991    0.1695    2.4920   13.964
## classes.corrMilho - Safrinha    3.7467    0.2669    2.0619    6.808
## classes.corrSolo Exposto      1.5722    0.6360    0.7943    3.112
##
## Concordance= 0.515 (se = 0.002 )
## Likelihood ratio test= 99.55 on 6 df,  p=<2e-16
## Wald test              = 84.22 on 6 df,  p=5e-16
## Score (logrank) test = 86.66 on 6 df,  p=<2e-16

s <- summary(m1$model)$coefficients
s

##               coef exp(coef) se(coef)      z
## classes.corrCampo Seco      0.2885195 1.3344503 0.3207198 0.8995998
## classes.corrCampo Úmido     -0.0770921 0.9258046 0.3885578 -0.1984058
## classes.corrCana-de-Açúcar    1.1460106 3.1456188 0.3082577 3.7177032
## classes.corrMata de Galeria    1.7748051 5.8991311 0.4396516 4.0368444
## classes.corrMilho - Safrinha    1.3208746 3.7466969 0.3047244 4.3346538
## classes.corrSolo Exposto      0.4524799 1.5722062 0.3483341 1.2989824
##               Pr(>|z|)
## classes.corrCampo Seco      3.683333e-01
## classes.corrCampo Úmido      8.427276e-01
## classes.corrCana-de-Açúcar    2.010423e-04
## classes.corrMata de Galeria    5.417496e-05
## classes.corrMilho - Safrinha    1.459897e-05
## classes.corrSolo Exposto      1.939500e-01

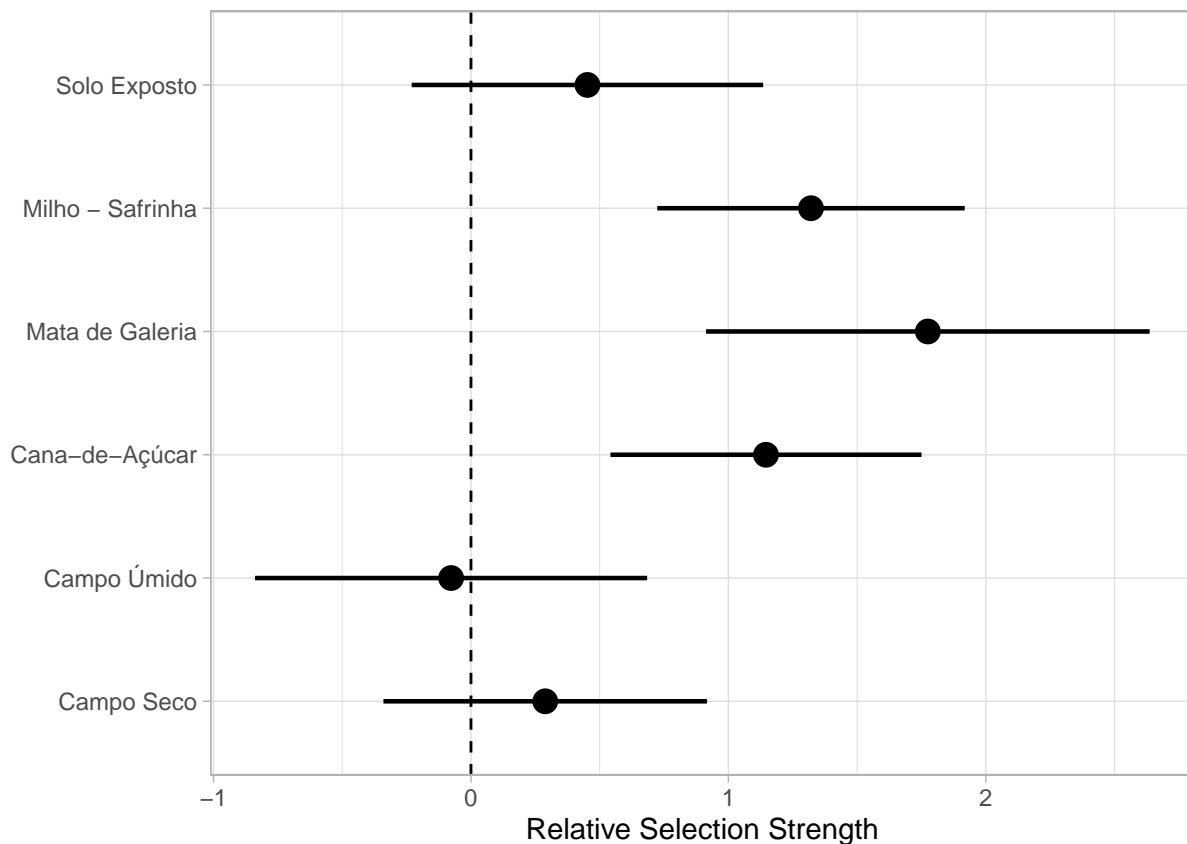
print(knitr::kable(s, digits = 4))

##
##
##               coef exp(coef) se(coef)      z Pr(>|z|)
## -----
## classes.corrCampo Seco      0.2885      1.3345    0.3207    0.8996    0.3683
## classes.corrCampo Úmido     -0.0771      0.9258    0.3886   -0.1984    0.8427
## classes.corrCana-de-Açúcar    1.1460      3.1456    0.3083    3.7177    0.0002
## classes.corrMata de Galeria    1.7748      5.8991    0.4397    4.0368    0.0001
## classes.corrMilho - Safrinha    1.3209      3.7467    0.3047    4.3347    0.0000
## classes.corrSolo Exposto      0.4525      1.5722    0.3483    1.2990    0.1939

# plot
broom::tidy(m1$model) %>%
  dplyr::mutate(term = stringr::str_remove(term, "classes.corr"))
```

```
## # A tibble: 6 x 7
##   term                estimate std.error statistic  p.value conf.low conf.high
##   <chr>              <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>
## 1 Campo Seco          0.289     0.321     0.900  3.68e-1   -0.340    0.917
## 2 Campo Úmido        -0.0771    0.389    -0.198  8.43e-1   -0.839    0.684
## 3 Cana-de-Açúcar      1.15      0.308     3.72   2.01e-4    0.542    1.75
## 4 Mata de Galeria      1.77      0.440     4.04   5.42e-5    0.913    2.64
## 5 Milho - Safrinha     1.32      0.305     4.33   1.46e-5    0.724    1.92
## 6 Solo Exposto         0.452     0.348     1.30   1.94e-1   -0.230    1.14
```

```
m1.plot <- broom::tidy(m1$model) %>%
  dplyr::mutate(term = stringr::str_remove(term, "classes.corr")) %>%
  ggplot(aes(x = term, y = estimate)) +
  geom_pointrange(aes(ymin = conf.low, ymax = conf.high),
    position = position_dodge(width = 0.7), size = 0.8) +
  geom_hline(yintercept = 0, lty = 2) +
  labs(y = "Relative Selection Strength", x = "") +
  theme_light() +
  coord_flip()
m1.plot
```



```
# m2.plot <- broom::tidy(m2$model) %>%
#   ggplot(aes(x = term, y = estimate)) +
#   geom_pointrange(aes(ymin = conf.low, ymax = conf.high),
#     position = position_dodge(width = 0.7), size = 0.8) +
#   geom_hline(yintercept = 0, lty = 2) +
#   labs(y = "Relative Selection Strength") +
```

```

# theme_light() +
# coord_flip()
# m2.plot

# maps coordinate system
coord.system <- as.character(maps@crs)

# calculate sampling rate statistics for all individuals
mov.track %>%
  tidyr::nest(-name) %>%
  dplyr::mutate(samp_rate = map(data, function(x) amt::summarize_sampling_rate(x))) %>%
  dplyr::select(name, samp_rate) %>%
  tidyr::unnest()

```

```
## Warning: All elements of `...` must be named.
```

```
## Did you want `data = c(x_, y_, t_)`?
```

```
## Warning: `cols` is now required.
```

```
## Please use `cols = c(samp_rate)`
```

```
## # A tibble: 4 x 10
```

```
##   name      min    q1    median mean    q3    max    sd    n unit
##   <chr>      <table> <table> <tabl> <tabl> <tabl> <tabl> <dbl> <int> <chr>
## 1 Olhos D'Ag~ 27.183~ 29.766~ 30    30.25~ 30.21~ 151.~   3.77  5710 min
## 2 Olhos D'Ag~ 27.633~ 29.766~ 30    30.86~ 30.20~ 1949.~ 36.8   2728 min
## 3 Pontal      27.766~ 29.783~ 30    30.10~ 30.20~ 62.~    1.87  5738 min
## 4 Alto Formo~ 27.250~ 29.800~ 30    30.89~ 30.23~ 181.~   7.04  4524 min
```

```
# rarefy and calculate exploratory analysis on used step length and angle vs land use class
```

```

mov.track.lu <- mov.track %>%
  tidyr::nest(-name) %>%
  dplyr::mutate(trk = map(data, function(d) {
    d %>%
      amt::track_resample(rate = minutes(30), tolerance = minutes(10)) %>%
      amt::filter_min_n_burst(min_n = 3) %>%
      amt::transform_coords(crs_to = coord.system) %>%
      amt::steps_by_burst() %>%
      amt::extract_covariates(maps, where = "start") %>%
      dplyr::mutate(classes.lev = factor(classes, levels = 1:length(lu.classes), labels = lu.classes),
                    dtm.harvest = ymd('1970-01-01') + days(julian.date),
                    classes.corr = ifelse((classes.lev == lu.classes[3]) & (t2_ > dtm.harvest) & (t2_ < dtm.harvest + 1),
                                           lu.classes[7], as.character(classes.lev)),
                    classes.corr = as.factor(ifelse((classes.corr == lu.classes[6]) & (t2_ > dtm.harvest) & (t2_ < dtm.harvest + 1),
                                                    lu.classes[7], as.character(classes.corr))),
                    classes.corr = relevel(classes.corr, lu.classes[4])) %>%
      dplyr::filter(!is.na(classes.corr), classes.corr != "Não Disponível - Vala") %>%
      dplyr::mutate(log_sl_ = log(sl_))
  })),
  trk = map(trk, function(d) d %>% dplyr::mutate(classes.corr = factor(classes.corr, levels = sort(unique(classes.corr))))) %>%
  dplyr::select(-data) %>%
  unnest(cols = trk)

```

```
## Warning: All elements of `...` must be named.
```

```
## Did you want `data = c(x_, y_, t_)`?
```

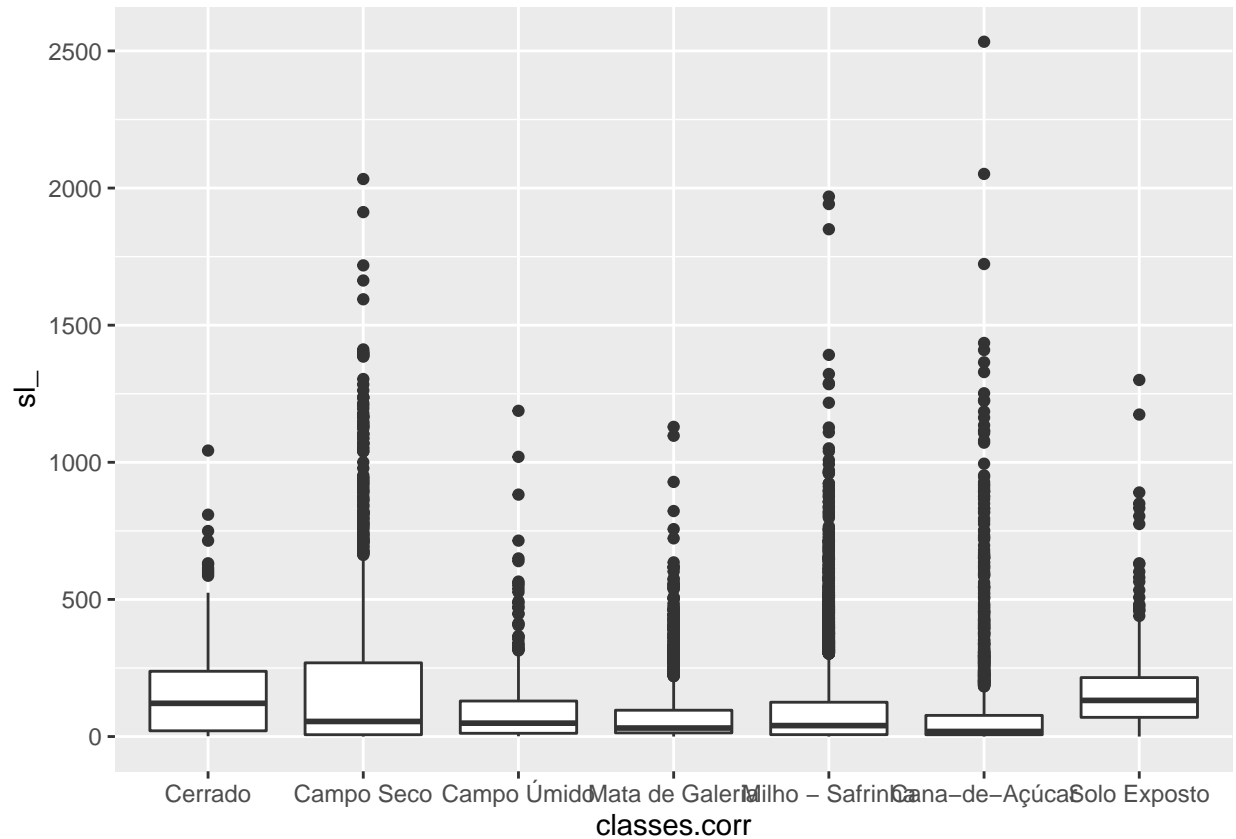
```
# plot step length
```

```
# general boxplot
```

```
mov.track.lu %>%
```

```
  ggplot() +
```

```
  geom_boxplot(aes(x = classes.corr, y = sl_))
```



```
# density plot for each individual
```

```
g1.sl <- mov.track.lu %>%
```

```
  ggplot(aes(x = sl_, y = classes.corr, fill = classes.corr)) +
```

```
  ggridges::geom_density_ridges(alpha = 0.5) +
```

```
  facet_wrap(~name) +
```

```
  theme_bw() +
```

```
  labs(x = '30-min Step length (km)', y = '',
```

```
        title = 'Distance traveled in 30 min') +
```

```
  theme(legend.position = "none")
```

```
g1.sl
```

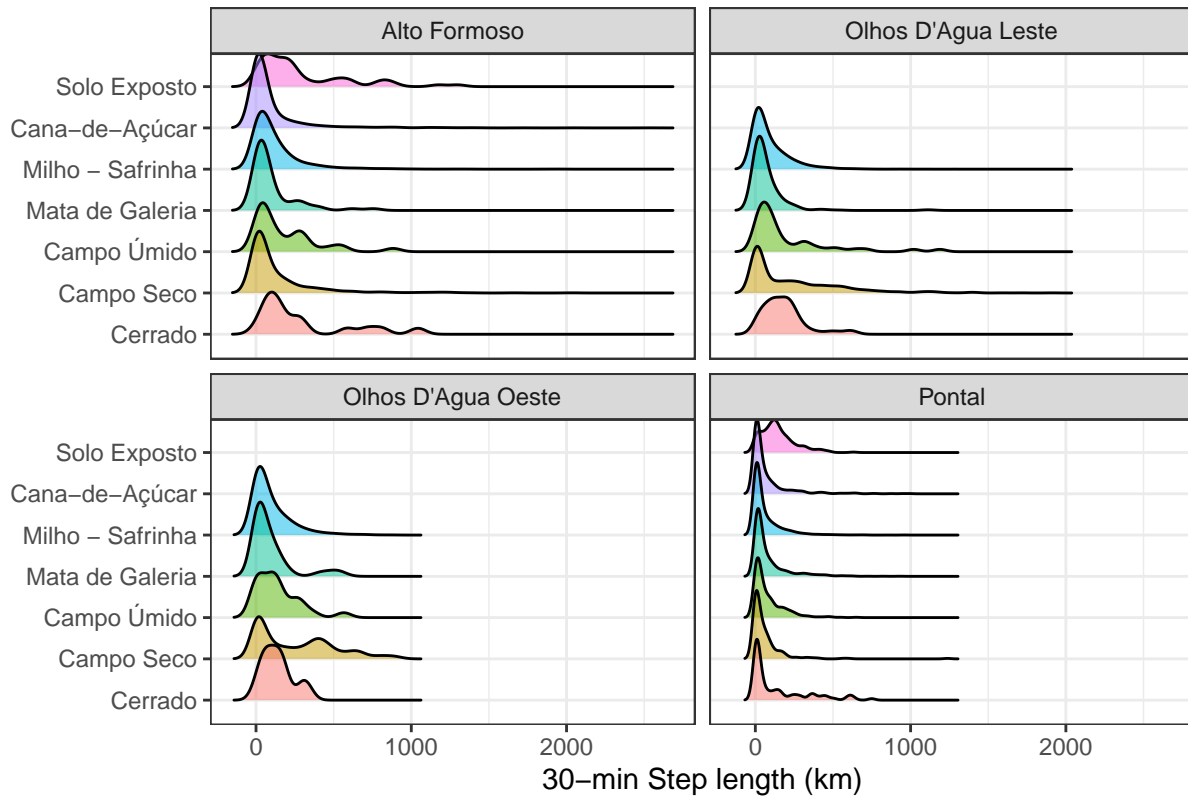
```
## Picking joint bandwidth of 50.7
```

```
## Picking joint bandwidth of 41.9
```

```
## Picking joint bandwidth of 47.4
```

```
## Picking joint bandwidth of 22.6
```

Distance traveled in 30 min



```
# calculating averages and confidence intervals for each individual
# and for the whole population
mov.track.lu.summ <- mov.track.lu %>%
  group_by(name, classes.corr) %>%
  summarise(n = n(),
    avg.sl = mean(sl_, na.rm = T),
    sd.sl = sd(sl_, na.rm = T),
    CI.sl.lower = avg.sl - 1.96 * sd(sl_, na.rm = T)/sqrt(n-1),
    CI.sl.higher = avg.sl + 1.96 * sd(sl_, na.rm = T)/sqrt(n-1),
    avg.ta = mean(ta_, na.rm = T),
    sd.ta = sd(ta_, na.rm = T),
    CI.ta.lower = avg.ta - 1.96 * sd(ta_, na.rm = T)/sqrt(n-1),
    CI.ta.higher = avg.ta + 1.96 * sd(ta_, na.rm = T)/sqrt(n-1))

pop.lu.summ <- mov.track.lu %>%
  group_by(classes.corr) %>%
  summarise(n = n(),
    avg.sl = mean(sl_, na.rm = T),
    sd.sl = sd(sl_, na.rm = T),
    CI.sl.lower = avg.sl - 1.96 * sd(sl_, na.rm = T)/sqrt(n-1),
    CI.sl.higher = avg.sl + 1.96 * sd(sl_, na.rm = T)/sqrt(n-1),
    avg.ta = mean(ta_, na.rm = T),
    sd.ta = sd(ta_, na.rm = T),
    CI.ta.lower = avg.ta - 1.96 * sd(ta_, na.rm = T)/sqrt(n-1),
    CI.ta.higher = avg.ta + 1.96 * sd(ta_, na.rm = T)/sqrt(n-1)) %>%
  dplyr::mutate(x = 1:n())
```

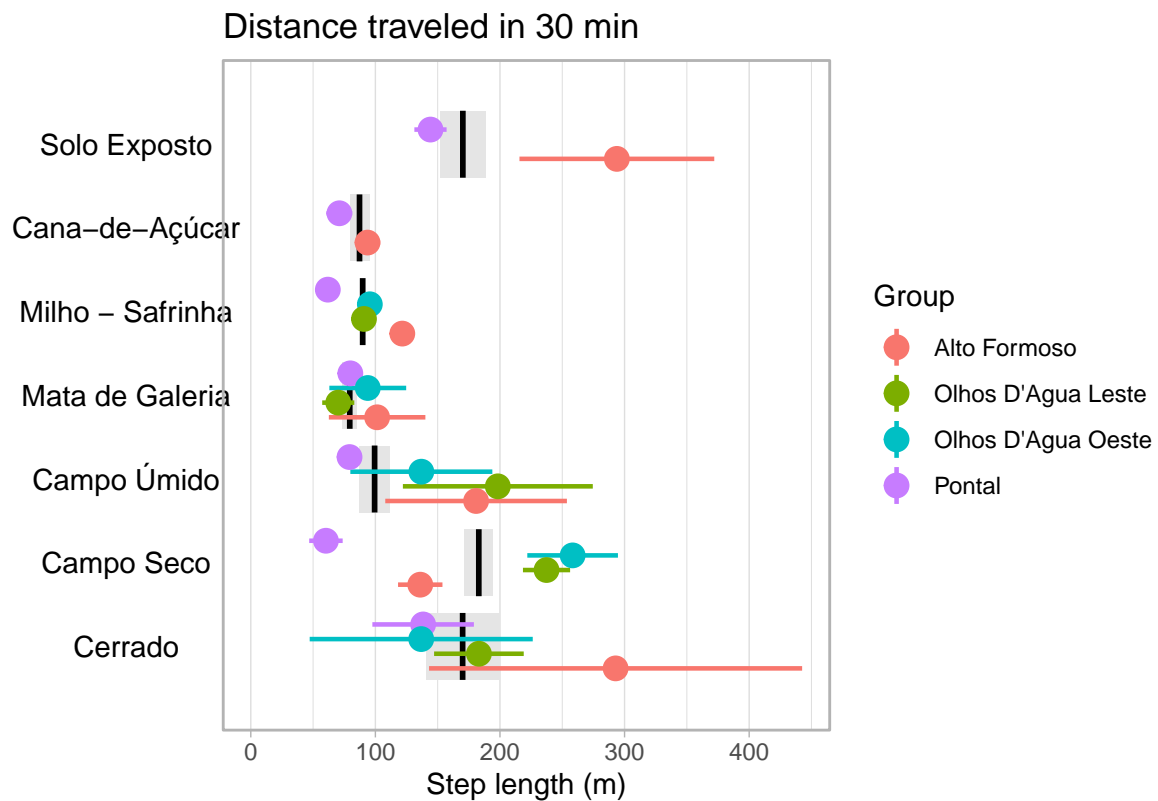


```

# if we used weighted average
# pop.lu.summ.weighted <- mov.track.lu.summ %>%
#   group_by(classes.corr) %>%
#   summarise(n.ind = n(),
#             avg.sl.pop = weighted.mean(avg.sl, w = c(1,2,3,4), na.rm = T),
#             CI.sl.lower = avg.sl.pop - 1.96 * sd(avg.sl, na.rm = T)/sqrt(n.ind-1),
#             CI.sl.higher = avg.sl.pop + 1.96 * sd(avg.sl, na.rm = T)/sqrt(n.ind-1),
#             avg.ta.pop = mean(avg.ta, na.rm = T),
#             CI.ta.lower = avg.ta.pop - 1.96 * sd(avg.ta, na.rm = T)/sqrt(n.ind-1),
#             CI.ta.higher = avg.ta.pop + 1.96 * sd(avg.ta, na.rm = T)/sqrt(n.ind-1)) %>%
#   dplyr::mutate(x = 1:n())

# plot all estimates in a single plot
g2.sl <- mov.track.lu.summ %>%
  ggplot(., aes(x = as.numeric(classes.corr), y = avg.sl, group = name, col = name), ) +
  geom_rect(mapping = aes(xmin = x - .4, xmax = x + .4, ymin = CI.sl.lower,
                        ymax = CI.sl.higher), data = pop.lu.summ, inherit.aes = FALSE, fill = "grey90",
            geom_segment(mapping = aes(x = x - .4, xend = x + .4,
                                      y = avg.sl, yend = avg.sl), data = pop.lu.summ, inherit.aes = FALSE, size = 1),
            geom_pointrange(aes( ymin = CI.sl.lower, ymax = CI.sl.higher),
                           position = position_dodge(width = 0.7), size = 0.8) +
  geom_text(data = pop.lu.summ, aes(x = x, label = classes.corr), y = -100, inherit.aes = FALSE) +
  labs(x = '', y = 'Step length (m)',
       col = 'Group',
       title = 'Distance traveled in 30 min') +
  ylim(0, NA) +
  scale_x_discrete(breaks = pop.lu.summ$x, label = rep("", length(pop.lu.summ$x))) +
  coord_flip(clip = "off") +
  theme_light() +
  theme(plot.margin = unit(c(1,1,1,6), "lines"))
g2.sl

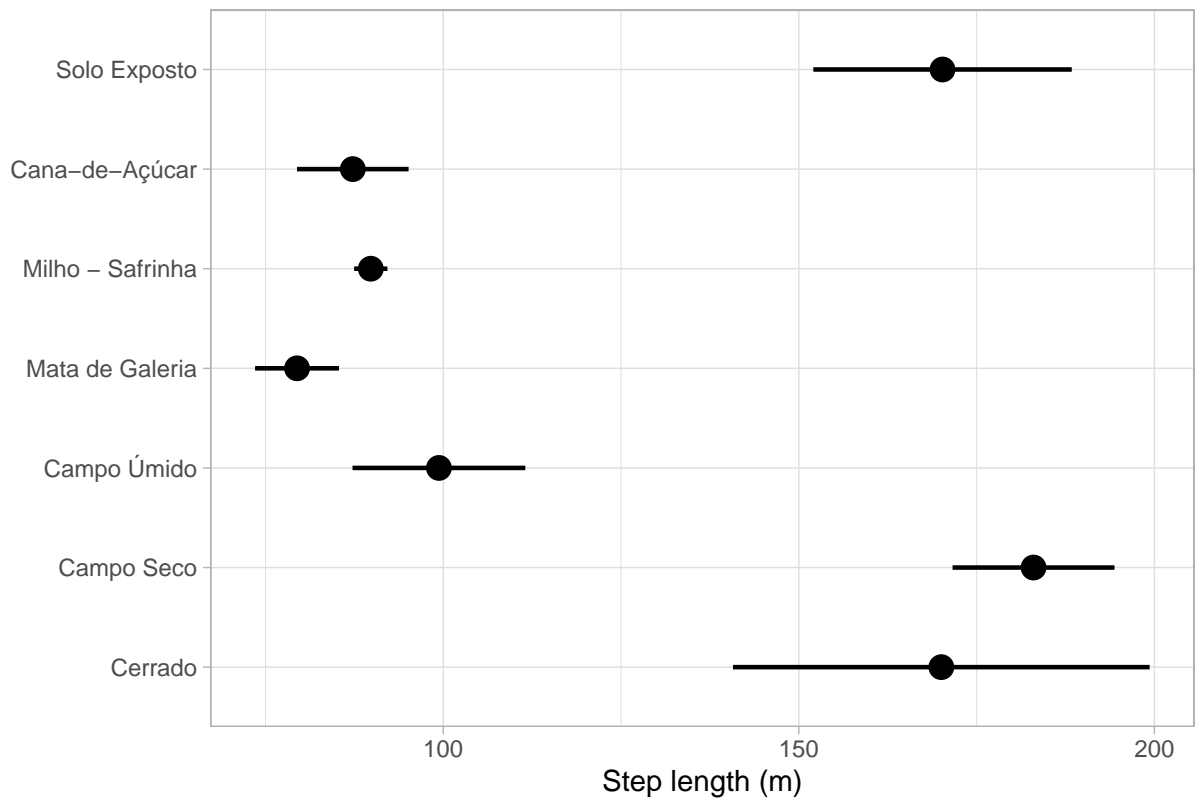
```



```
ggsave(filename = "sl_one_figure.png", plot = g2.sl, path = "results",
        width = 20, height = 17, units = "cm", dpi = 300)

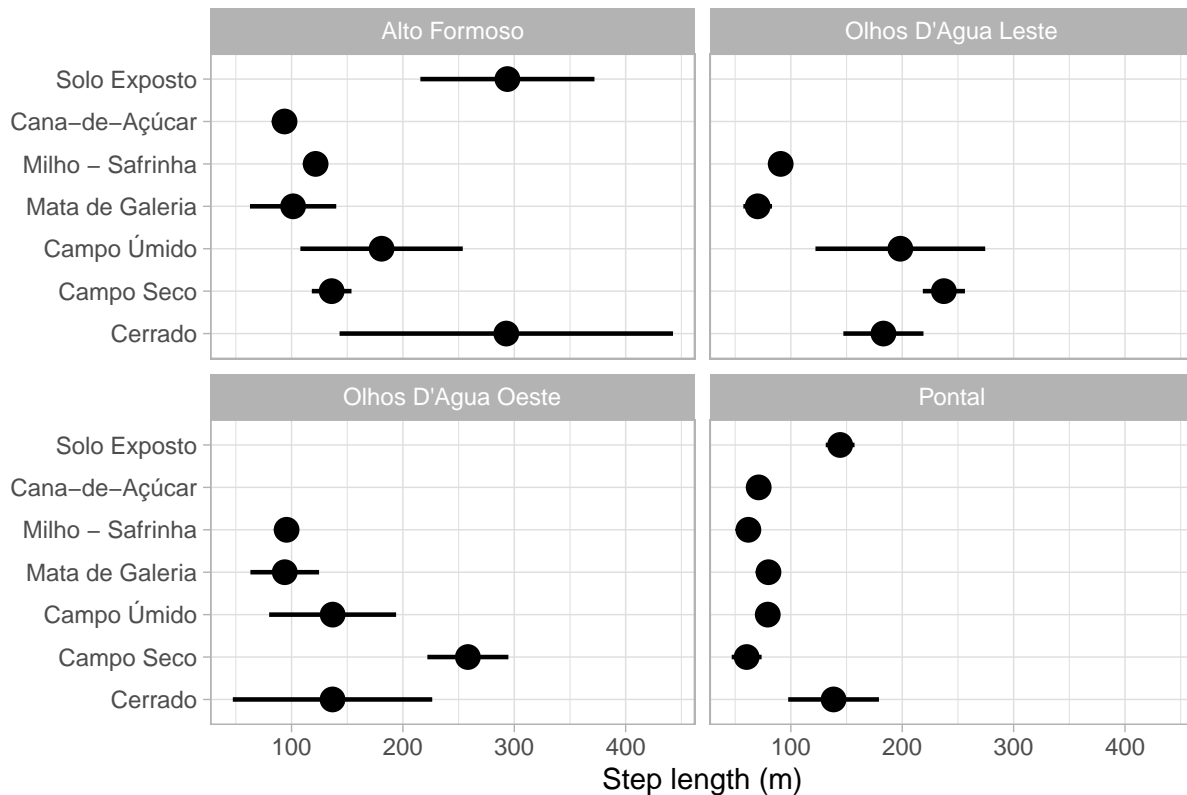
# plot only populational step length values
g3.sl.pop <- pop.lu.summ %>%
  ggplot(aes(x = classes.corr, y = avg.sl)) +
  geom_pointrange(aes(ymin = CI.sl.lower, ymax = CI.sl.higher),
                 position = position_dodge(width = 0.7), size = 0.8) +
  labs(x = "", y = "Step length (m)",
       title = "Population level distance traveled in 30 min") +
  theme_light() +
  coord_flip()
g3.sl.pop
```

Population level distance traveled in 30 min



```
# plot step length for each individual
g3.sl.ind <- mov.track.lu.summ %>%
  ggplot(aes(x = classes.corr, y = avg.sl)) +
  geom_pointrange(aes(ymin = CI.sl.lower, ymax = CI.sl.higher),
    position = position_dodge(width = 0.7), size = 0.8) +
  facet_wrap(~name) +
  labs(x = "", y = "Step length (m)",
    title = "Group level distance traveled in 30 min") +
  theme_light() +
  coord_flip()
g3.sl.ind
```

Group level distance traveled in 30 min



other possibility, using a Gamma distribution for step length

parameterization

*# $\mu = \text{shape} * \text{scale} \rightarrow \text{scale} = \mu / \text{shape}$*

shape

`dgamma2 = function(x, mu, shape, ...) dgamma(x, shape = shape, scale = mu/shape, ...)`

```
LLgamma <- function(x, mu, shape) {
  -sum(dgamma2(x, mu = mu, shape = shape, log = T))
}
```

*# mwei <- mle2(LLgamma, start = list(mu = mean(x\$sl_), shape = mean(x\$sl_)**2/var(x\$sl_)), data = x)*

calculate average and 95%CI for all individuals

```
mov.track.lu.summ.gamma <- mov.track.lu %>%
```

```
  dplyr::mutate(sl_ = sl_ + 1) %>%
```

```
  tidyr::nest_legacy(-c(name, classes.corr)) %>%
```

```
  dplyr::mutate(fit = purrr::map(data, amt::fit_sl_dist, x = sl_),
```

```
    fit.bbmle = purrr::map(data, function(x) {
```

```
      mle2(LLgamma, start = list(mu = mean(x$sl_), shape = mean(x$sl_)**2/var(x$sl_)), data
```

```
      conf.int = purrr::map(fit.bbmle, confint),
```

```
      coef = map(fit.bbmle, ~ broom::tidy(., conf.int = T))) %>%
```

```
  tidyr::unnest_legacy(coef) %>%
```

```
  dplyr::filter(term == "mu")
```

Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```

## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
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## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in onestep(step): Error encountered in profile: Error in optim(par = c(mu = 137.789882877826,
##   initial value in 'vmmmin' is not finite
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced

```

[illegible]

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```

## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
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## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in onestep(step): Error encountered in profile: Error in optim(par = c(mu = 137.789882877826,
##   initial value in 'vmmin' is not finite
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
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## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced

```

[illegible]

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[illegible]

[illegible]

[illegible]

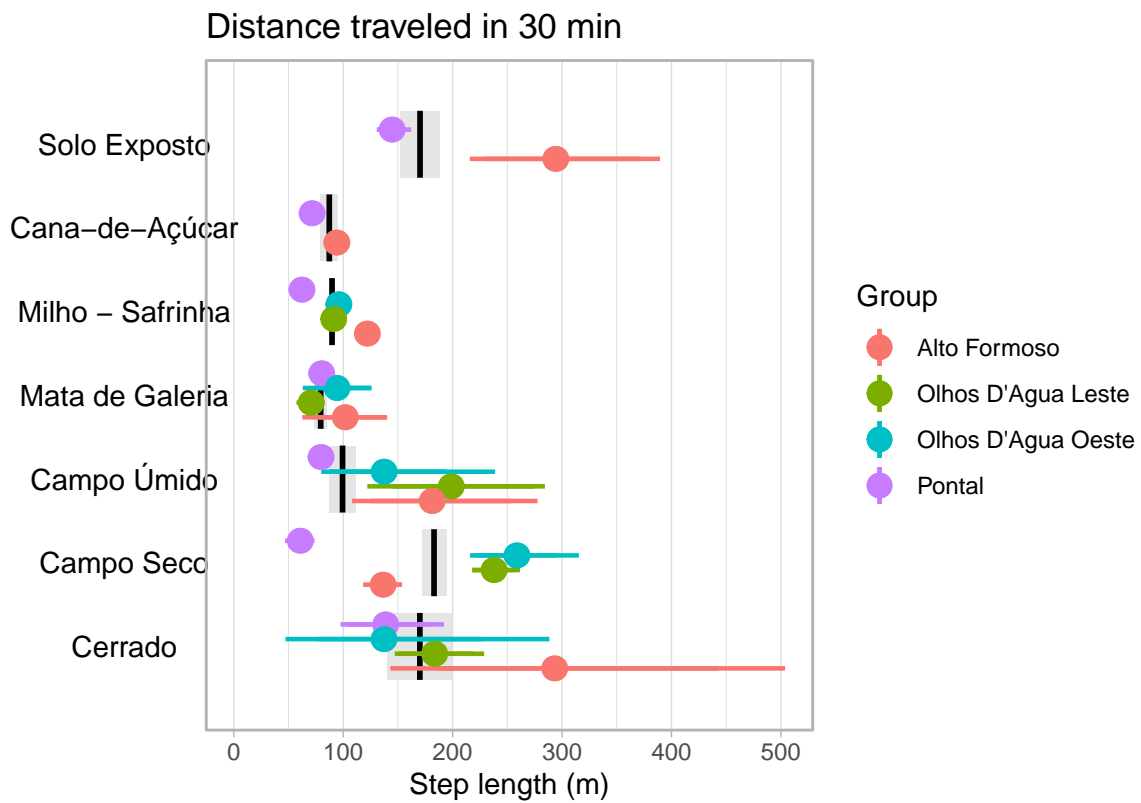
[illegible]

```
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
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## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
## Warning in dgamma(x, shape = shape, scale = mu/shape, ...): NaNs produced
```

```
# plot - it is almost the same thing!
```

```
g2.sl +
```

```
  geom_pointrange(data = mov.track.lu.summ.gamma,
                  aes(x = as.numeric(classes.corr), y = estimate,
                      ymin = conf.low, ymax = conf.high,
                      group = name, col = name),
                  position = position_dodge(width = 0.7), size = 0.8, inherit.aes = FALSE)
```



```
# plot turning angle
```

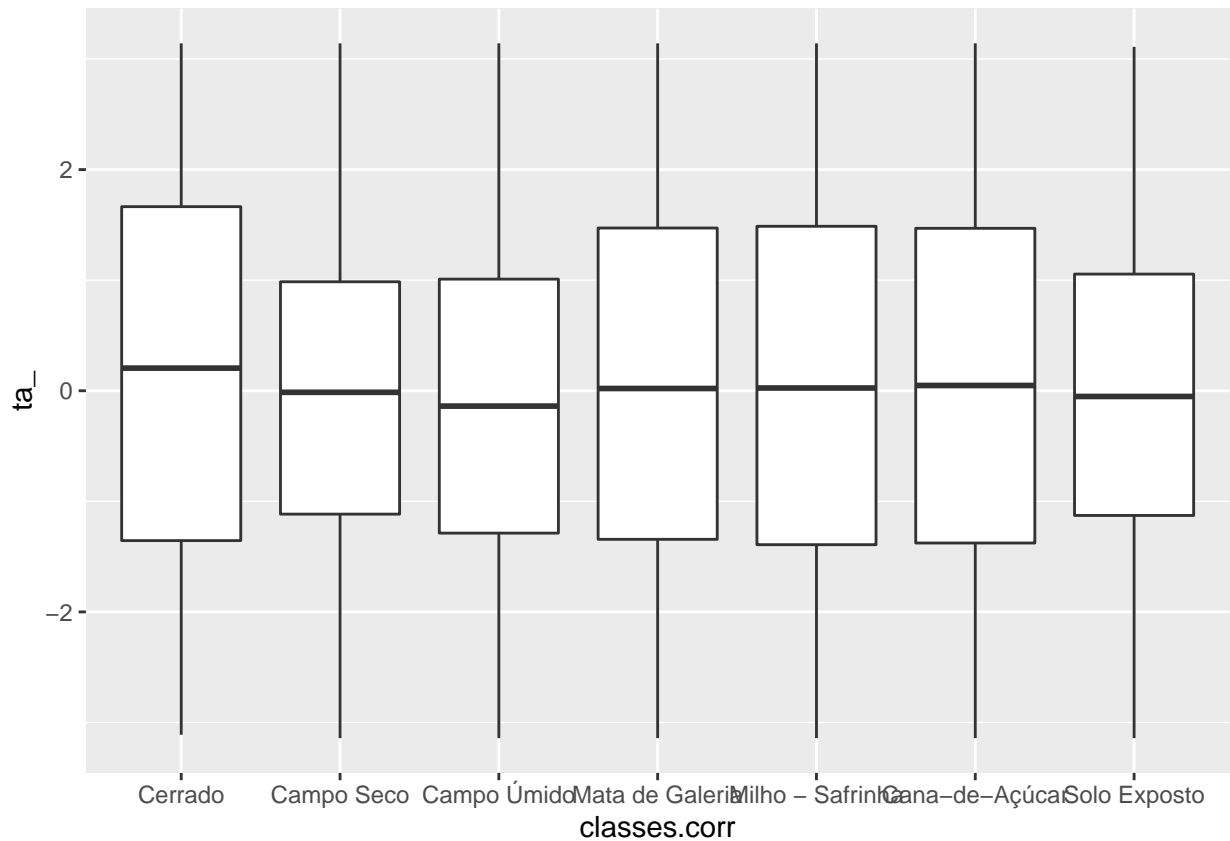
```
# general boxplot
```

```
mov.track.lu %>%
```

```
ggplot() +
```

```
geom_boxplot(aes(x = classes.corr, y = ta_))
```

```
## Warning: Removed 158 rows containing non-finite values (stat_boxplot).
```

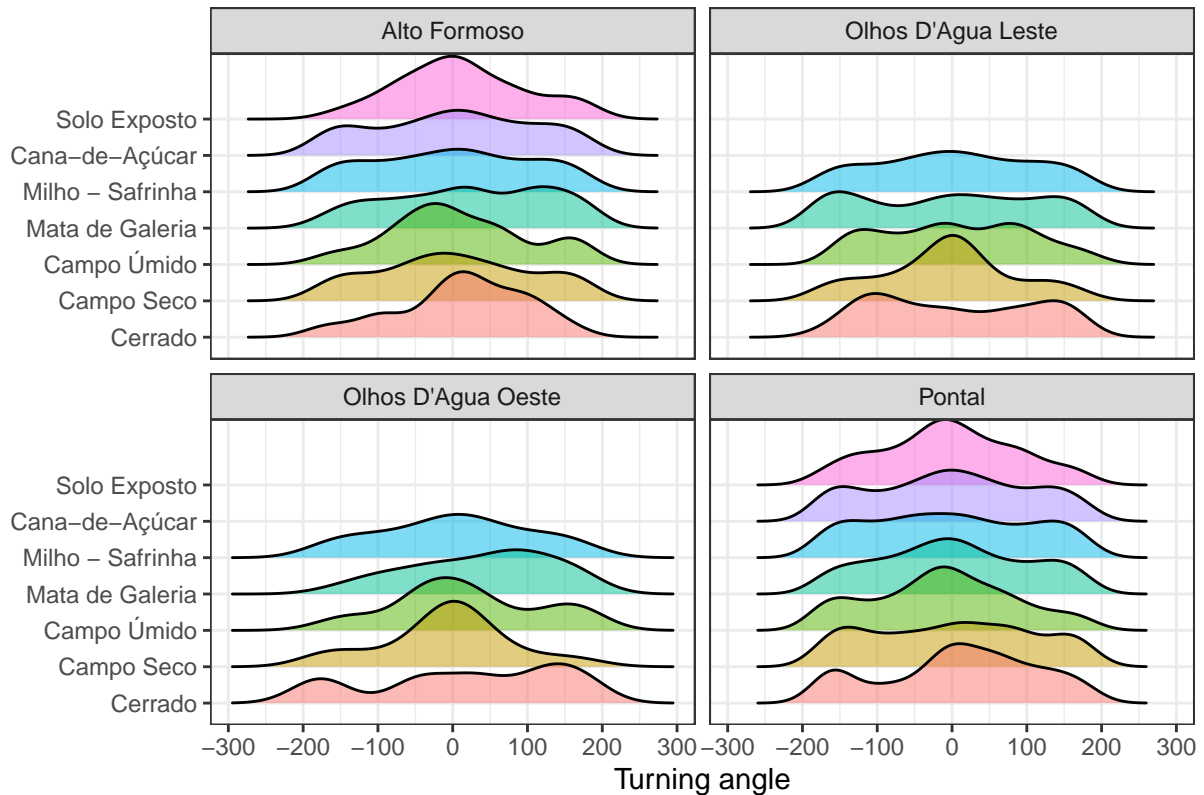


```
# density plot for each individual
g1.ta <- mov.track.lu %>%
  ggplot(aes(x = 180/pi*ta_, y = classes.corr, fill = classes.corr)) +
  ggridges::geom_density_ridges(alpha = 0.5) +
  facet_wrap(~name) +
  theme_bw() +
  labs(x = 'Turning angle', y = '',
       title = 'Turning angle in 30-min steps') +
  theme(legend.position = "none")
g1.ta
```

```
## Picking joint bandwidth of 31.2
## Picking joint bandwidth of 29.9
## Picking joint bandwidth of 38.2
## Picking joint bandwidth of 26.6

## Warning: Removed 158 rows containing non-finite values
## (stat_density_ridges).
```

Turning angle in 30-min steps



```
ggsave(filename = "ta_one_figure_distribution.png", plot = g1.ta, path = "results",
        width = 20, height = 17, units = "cm", dpi = 300)
```

```
## Picking joint bandwidth of 31.2
```

```
## Picking joint bandwidth of 29.9
```

```
## Picking joint bandwidth of 38.2
```

```
## Picking joint bandwidth of 26.6
```

```
## Warning: Removed 158 rows containing non-finite values
```

```
## (stat_density_ridges).
```

```
# plot all estimates in a single plot
```

```
g2.ta <- mov.track.lu.summ %>%
```

```
  ggplot(., aes(x = as.numeric(classes.corr), y = 180/pi*avg.ta, group = name, col = name)) +
```

```
  geom_rect(mapping = aes(xmin = x - .4, xmax = x + .4,
                        ymin = 180/pi*CI.ta.lower, ymax = 180/pi*CI.ta.higher),
```

```
            data = pop.lu.summ, inherit.aes = FALSE, fill = "grey90") +
```

```
  geom_segment(mapping = aes(x = x - .4, xend = x + .4,
                          y = 180/pi*avg.ta, yend = 180/pi*avg.ta),
```

```
                data = pop.lu.summ, inherit.aes = FALSE, size = 1) +
```

```
  geom_pointrange(aes(x = as.numeric(classes.corr), ymin = 180/pi*CI.ta.lower, ymax = 180/pi*CI.ta.higher),
                  position = position_dodge(width = 0.7), size = 0.8) +
```

```
  geom_hline(yintercept = 0, lty = 2) +
```

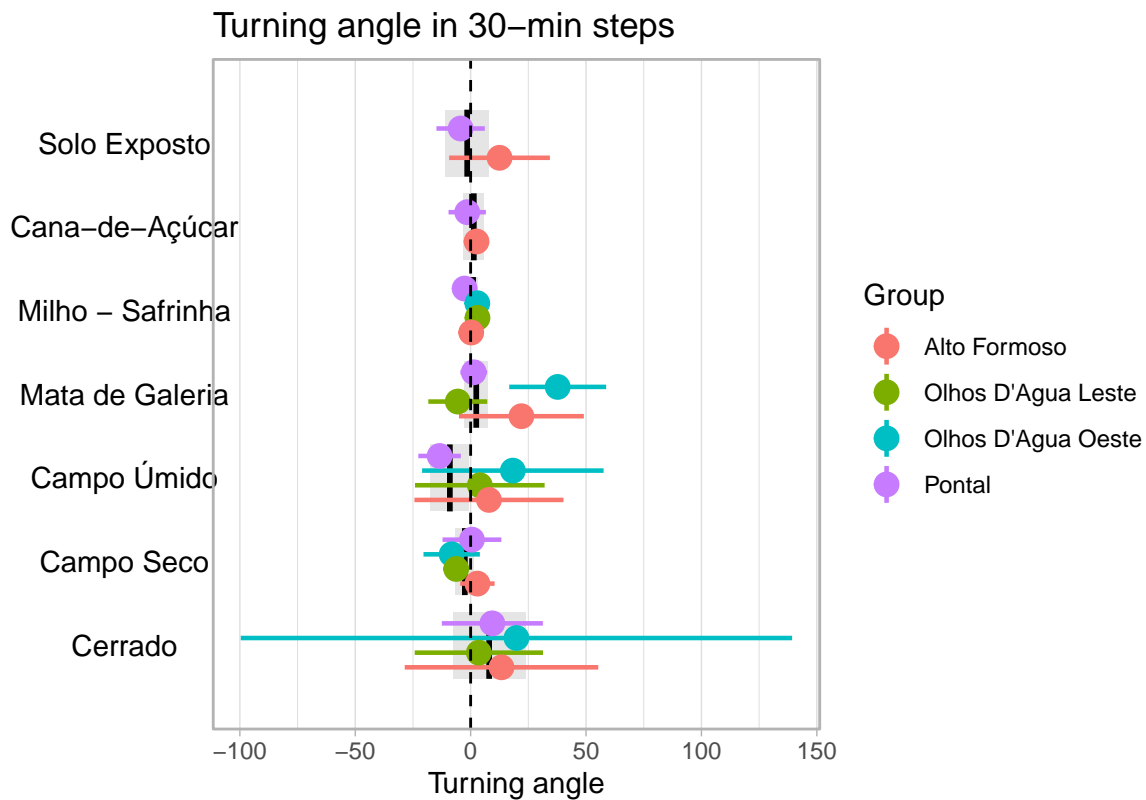
```
  geom_text(data = pop.lu.summ, aes(x = x, label = classes.corr), y = -150, inherit.aes = FALSE) +
```

```
  labs(x = '', y = 'Turning angle',
       col = 'Group',
```

```

    title = 'Turning angle in 30-min steps') +
  scale_x_discrete(breaks = pop.lu.summ$x, label = rep("", length(pop.lu.summ$x))) +
  coord_flip(clip = "off") +
  theme_light() +
  theme(plot.margin = unit(c(1,1,1,6), "lines"))
g2.ta

```



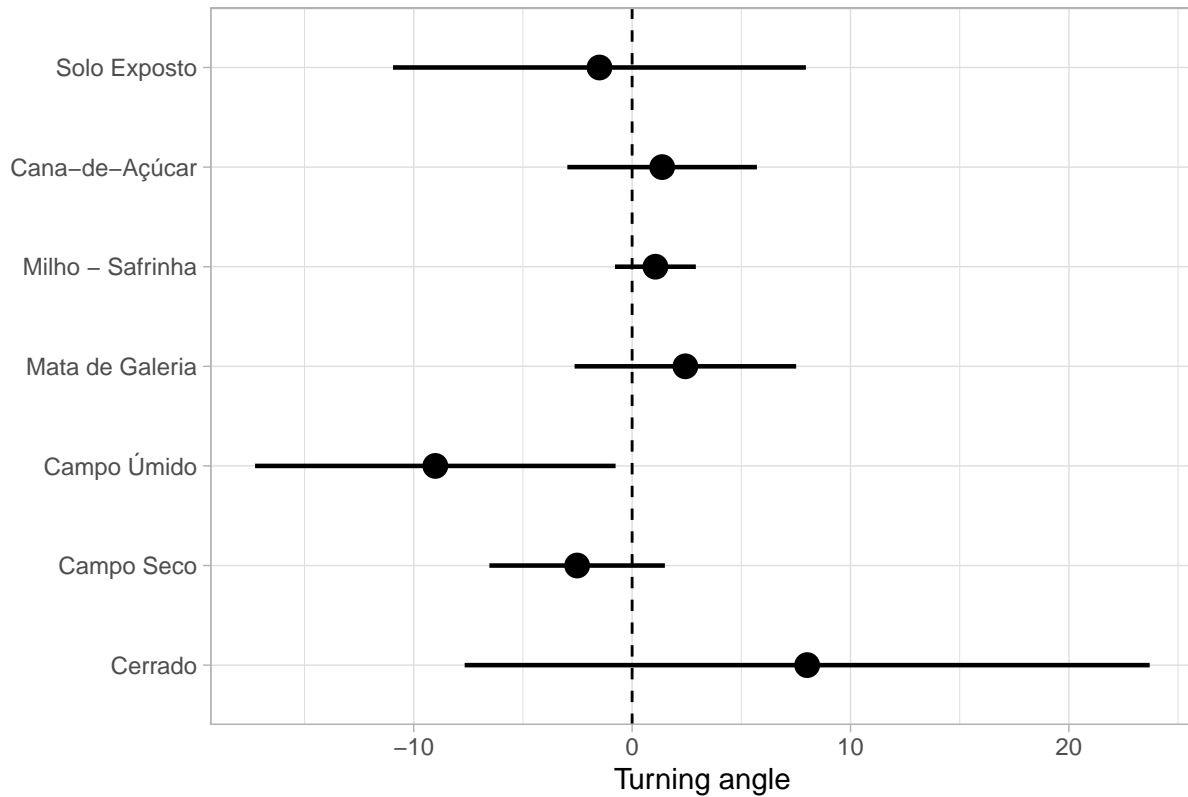
```

ggsave(filename = "ta_one_figure.png", plot = g2.ta, path = "results",
  width = 20, height = 17, units = "cm", dpi = 300)

# plot only populational step length values
g3.ta.pop <- pop.lu.summ %>%
  ggplot(aes(x = classes.corr, y = 180/pi*avg.ta)) +
  geom_pointrange(aes(ymin = 180/pi*CI.ta.lower, ymax = 180/pi*CI.ta.higher),
    position = position_dodge(width = 0.7), size = 0.8) +
  geom_hline(yintercept = 0, lty = 2) +
  labs(x = "", y = "Turning angle",
    title = "Population turning angle in 30-min steps") +
  theme_light() +
  coord_flip()
g3.ta.pop

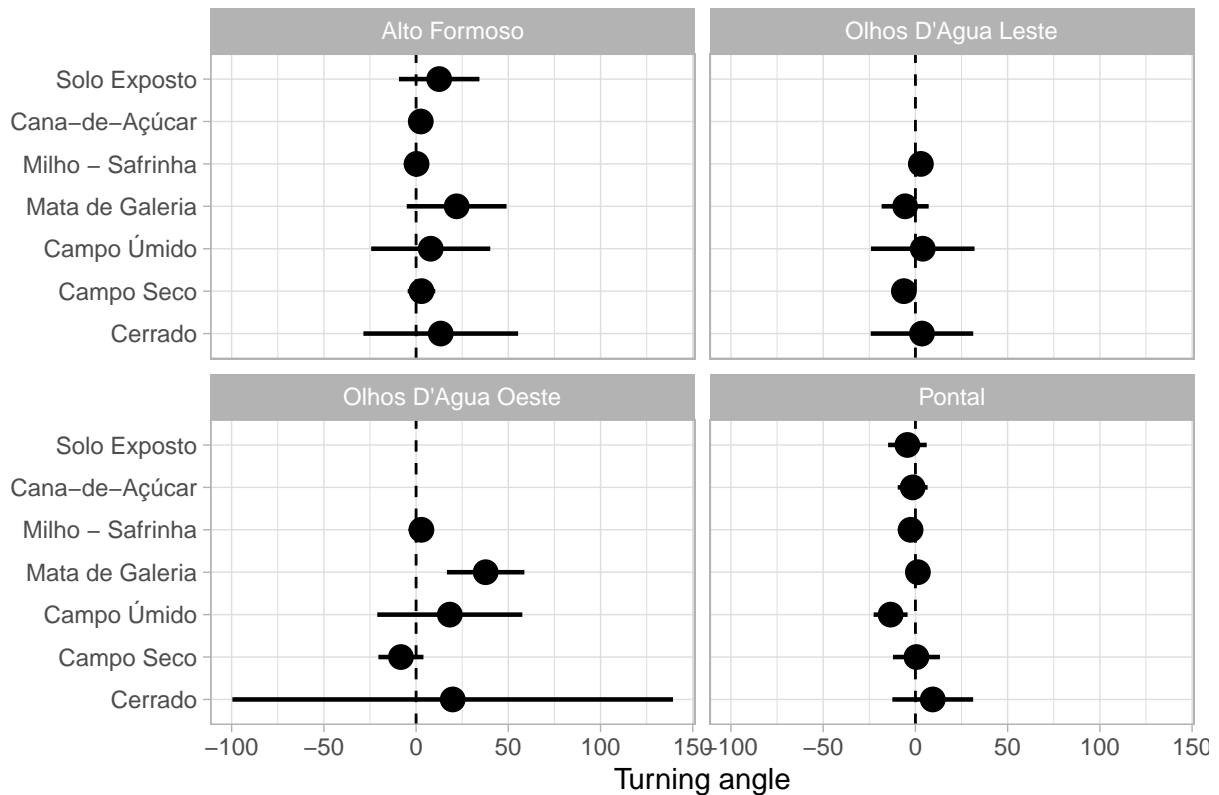
```


Population turning angle in 30-min steps



```
# plot step length for each individual
g3.ta.ind <- mov.track.lu.summ %>%
  ggplot(aes(x = classes.corr, y = 180/pi*avg.ta)) +
  # geom_pointrange(aes(ymin = 180/pi*(avg.ta - sd.ta), ymax = 180/pi*(avg.ta + sd.ta)),
  geom_pointrange(aes(ymin = 180/pi*CI.ta.lower, ymax = 180/pi*CI.ta.higher),
    position = position_dodge(width = 0.7), size = 0.8) +
  geom_hline(yintercept = 0, lty = 2) +
  facet_wrap(~name) +
  labs(x = "", y = "Turning angle",
    title = "Group level turning angle in 30-min steps") +
  theme_light() +
  coord_flip()
g3.ta.ind
```

Group level turning angle in 30-min steps



```
# fitting von mises
# dgamma2 = function(x, mu, shape, ...) dgamma(x, shape = shape, scale = mu/shape, ...)
#
# LLgamma <- function(x, mu, shape) {
#   -sum(dgamma2(x, mu = mu, shape = shape, log = T))
# }
# mwei <- mle2(LLgamma, start = list(mu = mean(x$sl_), shape = mean(x$sl_)**2/var(x$sl_)), data = x)

# calculate average and 95%CI for all individuals
# mov.track.lu.summ.vonmises <- mov.track.lu %>%
#   tidyr::nest_legacy(-c(name, classes.corr)) %>%
#   dplyr::mutate(fit = purrr::map(data, amt::fit_ta_dist, x = ta_),
#                 # fit.bbmle = purrr::map(data, function(x) {
#                 #   mle2(LLgamma, start = list(mu = mean(x$sl_), shape = mean(x$sl_)**2/var(x$sl_)),
#                 #   conf.int = purrr::map(fit.bbmle, confint),
#                 #   coef = map(fit, ~ broom::tidy(. $fit, conf.int = T))) %>%
#                 tidyr::unnest_legacy(coef) %>%
#   dplyr::filter(term == "mu")

# resample trajectory and do the analysis

# resample the trajectories for 30 min, filter paths with minimum 3 steps, transform coordinates to
# the same CRS as the background maps, create random steps, calculate steps and turning angles by burst
# calculate the correct class taking into account the plantation and harvest dates
mov.track.rsp.all <- mov.track %>%
  tidyr::nest_legacy(-name) %>%
```

```

dplyr::mutate(trk = map(data, function(d) {
  d %>%
    amt::track_resample(rate = minutes(30), tolerance = minutes(10)) %>%
    amt::filter_min_n_burst(min_n = 3) %>%
    amt::transform_coords(crs_to = coord.system) %>%
    amt::steps_by_burst() %>%
    amt::random_steps(n = 9) %>%
    amt::extract_covariates(maps) %>%
    dplyr::mutate(classes.lev = factor(classes, levels = 1:length(lu.classes), labels = lu.classes),
                  dttm.harvest = ymd('1970-01-01') + days(julian.date),
                  classes.corr = ifelse((classes.lev == lu.classes[3]) & (t2_ > dttm.harvest) & (t2_ >
                    lu.classes[7], as.character(classes.lev)),
                  classes.corr = as.factor(ifelse((classes.corr == lu.classes[6]) & (t2_ > dttm.harvest) &
                    lu.classes[7], as.character(classes.corr))),
                  classes.corr = relevel(classes.corr, lu.classes[4])) %>%
    dplyr::filter(!is.na(classes.corr)) %>%
    dplyr::mutate(log_sl_ = log(sl_))
}))

```

```

## Warning in random_steps.steps_xy(., n = 9): Step-lengths or turning angles
## contained NA, which were removed.

```

```

## Warning in random_steps.steps_xy(., n = 9): Step-lengths or turning angles
## contained NA, which were removed.

```

```

## Warning in random_steps.steps_xy(., n = 9): Step-lengths or turning angles
## contained NA, which were removed.

```

```

## Warning in random_steps.steps_xy(., n = 9): Step-lengths or turning angles
## contained NA, which were removed.

```

```

# check
mov.track.rsp.all %>%
  dplyr::select(-data) %>%
  tidyr::unnest_legacy(cols = trk)

```

```

## Warning in bind_rows_(x, .id): Unequal factor levels: coercing to character
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector

```

```

## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector

```

```

## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector

```

```

## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector

```

```

## # A tibble: 183,089 x 19
##   name burst_step_id case_   x1_   y1_   x2_   y2_
##   <chr> <dbl>    <int> <lg1> <dbl> <dbl> <dbl> <dbl>
## 1 Olho~     1        1 TRUE  2.99e5 7.97e6 2.98e5 7.97e6
## 2 Olho~     1        1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 3 Olho~     1        1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6

```

```
## 4 Olho~      1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 5 Olho~      1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 6 Olho~      1      1 FALSE 2.99e5 7.97e6 2.98e5 7.97e6
## 7 Olho~      1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 8 Olho~      1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 9 Olho~      1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## 10 Olho~     1      1 FALSE 2.99e5 7.97e6 2.99e5 7.97e6
## # ... with 183,079 more rows, and 11 more variables: t1_ <dtm>,
## #   t2_ <dtm>, dt_ <drtm>, sl_ <dbl>, ta_ <dbl>, classes <dbl>,
## #   julian.date <dbl>, classes.lev <fct>, dtm.harvest <date>,
## #   classes.corr <chr>, log_sl_ <dbl>
```

```
mov.track.rsp.all %>%
  dplyr::select(-data) %>%
  tidyr::unnest_legacy(cols = trk) %>%
  dplyr::filter(as.character(classes.lev) != as.character(classes.corr)) %>%
  print(n = 1000)
```

```
## Warning in bind_rows_(x, .id): Unequal factor levels: coercing to character
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## # A tibble: 3,445 x 19
```

	name	burst_	step_id_	case_	x1_	y1_	x2_	y2_
	<chr>	<dbl>	<int>	<lgl>	<dbl>	<dbl>	<dbl>	<dbl>
##	1 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	2 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	3 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	4 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	5 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	6 Pont~	7	3677	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	7 Pont~	7	3678	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	8 Pont~	7	3678	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	9 Pont~	7	3678	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	10 Pont~	7	3679	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	11 Pont~	7	3679	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	12 Pont~	7	3680	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	13 Pont~	7	3680	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	14 Pont~	7	3681	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	15 Pont~	7	3681	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	16 Pont~	7	3682	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	17 Pont~	7	3683	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	18 Pont~	7	3685	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	19 Pont~	7	3686	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	20 Pont~	7	3688	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

##	21	Pont~	7	3688	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	22	Pont~	7	3693	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	23	Pont~	7	3698	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	24	Pont~	7	3698	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	25	Pont~	7	3699	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	26	Pont~	7	3699	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	27	Pont~	7	3700	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	28	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	29	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	30	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	31	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	32	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	33	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	34	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	35	Pont~	7	3700	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	36	Pont~	7	3701	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	37	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	38	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	39	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	40	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	41	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	42	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	43	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	44	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	45	Pont~	7	3701	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	46	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	47	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	48	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	49	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	50	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	51	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	52	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	53	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	54	Pont~	7	3702	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	55	Pont~	7	3703	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	56	Pont~	7	3706	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	57	Pont~	7	3707	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	58	Pont~	7	3745	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	59	Pont~	7	3746	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	60	Pont~	7	3750	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	61	Pont~	7	3750	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	62	Pont~	7	3750	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	63	Pont~	7	3752	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	64	Pont~	7	3753	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	65	Pont~	7	3753	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	66	Pont~	7	3753	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

##	75	Pont~	7	3754	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	76	Pont~	7	3754	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	77	Pont~	7	3755	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	78	Pont~	7	3756	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	79	Pont~	7	3757	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	80	Pont~	7	3757	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	81	Pont~	7	3764	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	82	Pont~	7	3765	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	83	Pont~	7	3770	TRUE	2.88e5	7.97e6	2.89e5	7.97e6
##	84	Pont~	7	3771	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	85	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	86	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	87	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	88	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	89	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	90	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	91	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	92	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	93	Pont~	7	3771	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	94	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	95	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	96	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	97	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	98	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	99	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	100	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	101	Pont~	7	3772	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	102	Pont~	7	3773	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	103	Pont~	7	3773	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	104	Pont~	7	3781	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	105	Pont~	7	3786	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	106	Pont~	7	3789	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	107	Pont~	7	3812	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	108	Pont~	7	3812	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	109	Pont~	7	3813	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	110	Pont~	7	3814	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	111	Pont~	7	3814	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	112	Pont~	7	3814	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	113	Pont~	7	3848	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	114	Pont~	8	3904	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	115	Pont~	8	3905	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	116	Pont~	8	3945	FALSE	2.91e5	7.97e6	2.91e5	7.97e6
##	117	Pont~	8	3951	TRUE	2.90e5	7.97e6	2.90e5	7.97e6
##	118	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	119	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	120	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	121	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	122	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	123	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	124	Pont~	8	3952	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	125	Pont~	8	3953	TRUE	2.90e5	7.97e6	2.89e5	7.97e6
##	126	Pont~	8	3953	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	127	Pont~	8	3953	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	128	Pont~	8	3953	FALSE	2.90e5	7.97e6	2.90e5	7.97e6

##	129	Pont~	8	3954	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	130	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	131	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	132	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	133	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	134	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	135	Pont~	8	3954	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	136	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	137	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	138	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	139	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	140	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	141	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	142	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	143	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	144	Pont~	8	3955	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	145	Pont~	8	3958	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	146	Pont~	8	3958	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	147	Pont~	8	3959	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	148	Pont~	8	3960	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	149	Pont~	8	3964	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	150	Pont~	8	3965	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	151	Pont~	8	3968	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	152	Pont~	8	3974	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	153	Pont~	9	4154	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	154	Pont~	9	4174	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	155	Pont~	9	4175	TRUE	2.90e5	7.97e6	2.90e5	7.97e6
##	156	Pont~	9	4176	TRUE	2.90e5	7.97e6	2.90e5	7.97e6
##	157	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	158	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	159	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	160	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	161	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	162	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	163	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	164	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	165	Pont~	9	4176	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	166	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	167	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	168	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	169	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	170	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	171	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	172	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	173	Pont~	9	4177	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	174	Pont~	9	4177	FALSE				

##	183	Pont~	10	4283	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	184	Pont~	10	4283	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	185	Pont~	10	4284	TRUE	2.90e5	7.97e6	2.90e5	7.97e6
##	186	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	187	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	188	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	189	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	190	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	191	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	192	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	193	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	194	Pont~	10	4284	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	195	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	196	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	197	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	198	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	199	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	200	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	201	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	202	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	203	Pont~	10	4285	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	204	Pont~	10	4286	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	205	Pont~	10	4286	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	206	Pont~	10	4287	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	207	Pont~	10	4287	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	208	Pont~	11	4324	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	209	Pont~	11	4330	TRUE	2.90e5	7.97e6	2.90e5	7.97e6
##	210	Pont~	11	4330	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	211	Pont~	11	4330	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	212	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	213	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	214	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	215	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	216	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	217	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	218	Pont~	11	4331	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	219	Pont~	11	4332	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	220	Pont~	11	4332	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	221	Pont~	11	4332	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	222	Pont~	11	4332	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	223	Pont~	11	4332	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	224	Pont~	11	4333	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	225	Pont~	11	4333	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	226	Pont~	11	4333	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	227	Pont~	11	4338	TRUE	2.89e5	7.97e6	2.89e5	7.97e6

##	237	Pont~	11	4339	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	238	Pont~	11	4339	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	239	Pont~	11	4340	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	240	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	241	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	242	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	243	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	244	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	245	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	246	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	247	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	248	Pont~	11	4340	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	249	Pont~	11	4341	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	250	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	251	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	252	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	253	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	254	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	255	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	256	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	257	Pont~	11	4341	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	258	Pont~	11	4342	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	259	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	260	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	261	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	262	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	263	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	264	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	265	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	266	Pont~	11	4342	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	267	Pont~	11	4343	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	268	Pont~	11	4343	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	269	Pont~	11	4377	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	270	Pont~	11	4385	TRUE	2.88e5	7.97e6	2.89e5	7.97e6
##	271	Pont~	11	4386	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	272	Pont~	11	4386	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	273	Pont~	11	4386	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	274	Pont~	11	4386	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	275	Pont~	11	4386	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	276	Pont~	11	4386	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	277	Pont~	11	4387	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	278	Pont~	11	4387	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	279	Pont~	11	4387	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	280	Pont~	11	4387	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	281	Pont~	11	4387	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

##	291	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	292	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	293	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	294	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	295	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	296	Pont~	11	4390	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	297	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	298	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	299	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	300	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	301	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	302	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	303	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	304	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	305	Pont~	11	4391	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	306	Pont~	11	4392	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	307	Pont~	11	4393	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	308	Pont~	11	4394	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	309	Pont~	11	4394	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	310	Pont~	11	4395	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	311	Pont~	11	4395	FALSE	2.89e5	7.97e6	2.90e5	7.97e6
##	312	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	313	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	314	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	315	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	316	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	317	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	318	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	319	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	320	Pont~	11	4396	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	321	Pont~	11	4397	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	322	Pont~	11	4398	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	323	Pont~	11	4398	FALSE	2.90e5	7.97e6	2.90e5	7.97e6
##	324	Pont~	11	4403	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	325	Pont~	11	4403	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	326	Pont~	11	4404	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	327	Pont~	11	4406	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	328	Pont~	11	4406	FALSE	2.90e5	7.97e6	2.89e5	7.97e6
##	329	Pont~	12	4424	TRUE	2.90e5	7.97e6	2.89e5	7.97e6
##	330	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	331	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	332	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	333	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	334	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	335	Pont~	12	4425	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

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##	507	Pont~	12	4490	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	508	Pont~	12	4490	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	509	Pont~	12	4490	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	510	Pont~	12	4491	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	511	Pont~	12	4491	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	512	Pont~	12	4492	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	513	Pont~	12	4492	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	514	Pont~	12	4492	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	515	Pont~	12	4492	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	516	Pont~	12	4493	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	517	Pont~	12	4493	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	518	Pont~	12	4493	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	519	Pont~	12	4493	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	520	Pont~	12	4493	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	521	Pont~	12	4494	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	522	Pont~	12	4494	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	523	Pont~	12	4494	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	524	Pont~	12	4495	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	525	Pont~	12	4495	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	526	Pont~	12	4495	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	527	Pont~	12	4495	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	528	Pont~	12	4496	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	529	Pont~	12	4496	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	530	Pont~	12	4496	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	531	Pont~	12	4496	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	532	Pont~	12	4496	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	533	Pont~	12	4497	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	534	Pont~	12	4497	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	535	Pont~	12	4497	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	536	Pont~	12	4497	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	537	Pont~	12	4498	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	538	Pont~	12	4498	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	539	Pont~	12	4498	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	540	Pont~	12	4498	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	541	Pont~	12	4498	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	542	Pont~	12	4499	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	543	Pont~	12	4501	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	544	Pont~	12	4501	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	545	Pont~	12	4501	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	546	Pont~	12	4502	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	547	Pont~	12	4502	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	548	Pont~	12	4502	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	549	Pont~	12	4502	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	550	Pont~	12	4502	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	551	Pont~	12	4502	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

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##	669	Pont~	12	4546	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	670	Pont~	12	4546	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	671	Pont~	12	4546	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	672	Pont~	12	4546	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	673	Pont~	12	4547	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	674	Pont~	12	4547	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	675	Pont~	12	4547	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	676	Pont~	12	4547	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	677	Pont~	12	4548	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	678	Pont~	12	4549	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	679	Pont~	12	4549	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	680	Pont~	12	4550	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	681	Pont~	12	4552	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	682	Pont~	12	4553	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	683	Pont~	12	4569	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	684	Pont~	12	4570	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	685	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	686	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	687	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	688	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	689	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	690	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	691	Pont~	12	4570	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	692	Pont~	12	4571	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	693	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	694	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	695	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	696	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	697	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	698	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	699	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	700	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	701	Pont~	12	4571	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	702	Pont~	12	4572	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	703	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	704	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	705	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	706	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	707	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	708	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	709	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	710	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	711	Pont~	12	4572	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	712	Pont~	12	4573	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	713	Pont~	12	4573	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

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##	777 Pont~	12	4582	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	778 Pont~	12	4582	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	779 Pont~	12	4583	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	780 Pont~	12	4583	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	781 Pont~	12	4584	TRUE	2.89e5	7.97e6	2.88e5	7.97e6
##	782 Pont~	12	4584	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	783 Pont~	12	4584	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	784 Pont~	12	4584	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	785 Pont~	12	4584	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	786 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	787 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	788 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	789 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	790 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	791 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.88e5	7.97e6
##	792 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	793 Pont~	12	4585	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	794 Pont~	12	4586	FALSE	2.88e5	7.97e6	2.89e5	7.97e6
##	795 Pont~	12	4587	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	796 Pont~	12	4587	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	797 Pont~	12	4587	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	798 Pont~	12	4587	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	799 Pont~	12	4588	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	800 Pont~	12	4588	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	801 Pont~	12	4589	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	802 Pont~	12	4590	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	803 Pont~	12	4590	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	804 Pont~	12	4590	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	805 Pont~	12	4591	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	806 Pont~	12	4592	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	807 Pont~	12	4592	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	808 Pont~	12	4592	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	809 Pont~	12	4593	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	810 Pont~	12	4593	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	811 Pont~	12	4594	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	812 Pont~	12	4594	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	813 Pont~	12	4595	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	814 Pont~	12	4595	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	815 Pont~	12	4595	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	816 Pont~	12	4596	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	817 Pont~	12	4596	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	818 Pont~	12	4599	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	819 Pont~	12	4600	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	820 Pont~	12	4601	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	821 Pont~	12	4602	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	822 Pont~	12	4607	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	823 Pont~	12	4608	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	824 Pont~	12	4609	FALSE	2.89e5			

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##	885	Pont~	12	4630	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	886	Pont~	12	4631	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	887	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	888	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	889	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	890	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	891	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	892	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	893	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	894	Pont~	12	4631	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	895	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	896	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	897	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	898	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	899	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	900	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	901	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	902	Pont~	12	4632	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	903	Pont~	12	4634	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	904	Pont~	12	4634	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	905	Pont~	12	4634	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	906	Pont~	12	4635	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	907	Pont~	12	4636	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	908	Pont~	12	4636	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	909	Pont~	12	4637	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	910	Pont~	12	4637	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	911	Pont~	12	4637	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	912	Pont~	12	4638	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	913	Pont~	12	4638	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	914	Pont~	12	4639	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	915	Pont~	12	4639	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	916	Pont~	12	4640	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	917	Pont~	12	4641	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	918	Pont~	12	4641	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	919	Pont~	12	4641	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	920	Pont~	12	4642	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	921	Pont~	12	4642	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	922	Pont~	12	4642	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	923	Pont~	12	4644	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	924	Pont~	12	4667	TRUE	2.90e5	7.97e6	2.89e5	7.97e6
##	925	Pont~	12	4668	TRUE	2.89e5	7.97e6	2.89e5	7.97e6
##	926	Pont~	12	4668	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	927	Pont~	12	4668	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	928	Pont~	12	4668	FALSE	2.89e5	7.97e6	2.89e5	7.97e6
##	929	Pont~	12	4668	FALSE	2.89e5	7.97e6	2.89e5	7.97e6

[illegible]

```

## 993 Pont~      12      4678 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 994 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 995 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 996 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 997 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 998 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 999 Pont~      12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## 1000 Pont~     12      4679 FALSE 2.89e5 7.97e6 2.89e5 7.97e6
## # ... with 2,445 more rows, and 11 more variables: t1_ <dtm>, t2_ <dtm>,
## #   dt_ <drtn>, sl_ <dbl>, ta_ <dbl>, classes <dbl>, julian.date <dbl>,
## #   classes.lev <fct>, dtm.harvest <date>, classes.corr <chr>,
## #   log_sl_ <dbl>

# get all steps (used or available) that go outside the mapped area (or to the "Vala" class that we're
# we also remove steps for which the group Olhos D'Agua Leste available steps were Sugarcane, since the
# and the animal did not use this class even a single time
outside.area <- mov.track.rsp.all %>%
  dplyr::select(-data) %>%
  tidyr::unnest_legacy(cols = trk) %>%
  dplyr::mutate(row.number = row_number(),
               outside.area = is.na(classes.corr),
               identifier = paste(name, burst_, step_id_, sep = "_")) %>%
  dplyr::filter(outside.area == T | classes.corr == "Não Disponível - Vala" |
               (name == "Olhos D'Agua Leste" & (classes.corr == lu.classes[3] | classes.corr == lu.c
## Warning in bind_rows(x, .id): Unequal factor levels: coercing to character

## Warning in bind_rows(x, .id): binding character and factor vector,
## coercing into character vector

## Warning in bind_rows(x, .id): binding character and factor vector,
## coercing into character vector

## Warning in bind_rows(x, .id): binding character and factor vector,
## coercing into character vector

## Warning in bind_rows(x, .id): binding character and factor vector,
## coercing into character vector

outside.area$classes.corr # ok

## [1] "Cana-de-Açúcar"      "Cana-de-Açúcar"
## [3] "Cana-de-Açúcar"      "Não Disponível - Vala"
## [5] "Não Disponível - Vala" "Não Disponível - Vala"
## [7] "Não Disponível - Vala" "Não Disponível - Vala"
## [9] "Não Disponível - Vala" "Não Disponível - Vala"
## [11] "Não Disponível - Vala" "Não Disponível - Vala"
## [13] "Não Disponível - Vala" "Não Disponível - Vala"
## [15] "Não Disponível - Vala" "Não Disponível - Vala"
## [17] "Não Disponível - Vala" "Não Disponível - Vala"
## [19] "Não Disponível - Vala" "Não Disponível - Vala"
## [21] "Não Disponível - Vala" "Não Disponível - Vala"
## [23] "Não Disponível - Vala" "Não Disponível - Vala"
## [25] "Não Disponível - Vala" "Não Disponível - Vala"
## [27] "Não Disponível - Vala" "Não Disponível - Vala"

```

[illegible]

[illegible]

```
# filtering these lines and re-nesting
mov.track.rsp.all.nonNA <- mov.track.rsp.all %>%
  dplyr::select(-data) %>%
  tidyr::unnest_legacy(cols = trk) %>%
  dplyr::mutate(identifier = paste(name, burst_, step_id_, sep = "_")) %>%
  dplyr::filter(!(identifier %in% outside.area$identifier)) %>%
  # dplyr::filter(!(name == "Olhos D'Agua Leste" & classes.corr == lu.classes[3])) %>%
  tidyr::nest_legacy(-name)
```

```
## Warning in bind_rows_(x, .id): Unequal factor levels: coercing to character
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
m1.all <- mov.track.rsp.all.nonNA %>%
  mutate(trk = map(data, function(d) {
    d %>%
      dplyr::mutate(classes.corr = factor(classes.corr, levels = sort(unique(classes.corr))) %>% releve
    }),
    fit = map(trk, ~ amt::fit_clogit(., case_ ~ classes.corr + strata(step_id_))))
```

```
# m1.all <- mov.track.rsp.all %>%
#   dplyr::mutate(
#     trk.class.ok = map(trk, function(d) {
#       d %>%
#         dplyr::mutate(classes.corr = factor(classes.corr, levels = sort(unique(classes.corr))))
#     }),
#     fit = map(trk.class.ok, ~ amt::fit_clogit(., case_ ~ classes.corr + strata(step_id_))))
```

```
# table with coefficients
```

```
d2 <- m1.all %>%
  dplyr::mutate(coef = map(fit, ~ broom::tidy(.x$model))) %>%
  dplyr::select(name, coef) %>%
  tidyr::unnest_legacy() %>%
  dplyr::mutate(name = factor(name),
    term = factor(term))
```

```
d2 %>%
  print(n = 50)
```

```
## # A tibble: 20 x 8
```

```
##   name      term      estimate std.error statistic p.value  conf.low conf.high
##   <fct>    <fct>      <dbl>    <dbl>    <dbl>   <dbl>    <dbl>    <dbl>
## 1 Olhos ~ classes~ -0.301    0.179    -1.68  9.22e-2  -0.651    0.0493
## 2 Olhos ~ classes~ -0.140    0.255    -0.548 5.83e-1  -0.640    0.360
```

```
## 3 Olhos ~ classes~ 0.488 0.205 2.38 1.75e-2 0.0856 0.890
## 4 Olhos ~ classes~ 0.595 0.155 3.85 1.17e-4 0.292 0.898
## 5 Olhos ~ classes~ 0.980 0.653 1.50 1.34e-1 -0.300 2.26
## 6 Olhos ~ classes~ 1.74 0.637 2.73 6.25e-3 0.493 2.99
## 7 Olhos ~ classes~ 1.68 0.616 2.73 6.27e-3 0.477 2.89
## 8 Olhos ~ classes~ 2.49 0.605 4.12 3.85e-5 1.31 3.68
## 9 Pontal classes~ 0.572 0.178 3.22 1.28e-3 0.224 0.921
## 10 Pontal classes~ 0.628 0.171 3.67 2.46e-4 0.292 0.963
## 11 Pontal classes~ 0.0815 0.200 0.408 6.83e-1 -0.310 0.473
## 12 Pontal classes~ 0.845 0.161 5.23 1.66e-7 0.528 1.16
## 13 Pontal classes~ 0.916 0.174 5.28 1.32e-7 0.575 1.26
## 14 Pontal classes~ 0.112 0.188 0.598 5.50e-1 -0.256 0.481
## 15 Alto F~ classes~ -0.0557 0.319 -0.175 8.61e-1 -0.681 0.569
## 16 Alto F~ classes~ -0.596 0.391 -1.52 1.28e-1 -1.36 0.171
## 17 Alto F~ classes~ 0.932 0.306 3.05 2.33e-3 0.332 1.53
## 18 Alto F~ classes~ 1.83 0.468 3.92 8.71e-5 0.918 2.75
## 19 Alto F~ classes~ 1.12 0.302 3.72 2.00e-4 0.531 1.72
## 20 Alto F~ classes~ 0.0752 0.348 0.216 8.29e-1 -0.606 0.756
```

```
# result for Olhos D'agua Oeste for sugarcane cannot be trusted. Let's ignore this class for this group
d2 <- d2 %>%
```

```
  dplyr::mutate(term = stringr::str_remove(term, "classes.corr") %>% as.factor())
```

```
d2
```

```
## # A tibble: 20 x 8
```

```
##   name      term      estimate std.error statistic p.value conf.low conf.high
##   <fct>    <fct>      <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>
## 1 Olhos D~ Campo ~ -0.301 0.179 -1.68 9.22e-2 -0.651 0.0493
## 2 Olhos D~ Campo ~ -0.140 0.255 -0.548 5.83e-1 -0.640 0.360
## 3 Olhos D~ Mata d~ 0.488 0.205 2.38 1.75e-2 0.0856 0.890
## 4 Olhos D~ Milho ~ 0.595 0.155 3.85 1.17e-4 0.292 0.898
## 5 Olhos D~ Campo ~ 0.980 0.653 1.50 1.34e-1 -0.300 2.26
## 6 Olhos D~ Campo ~ 1.74 0.637 2.73 6.25e-3 0.493 2.99
## 7 Olhos D~ Mata d~ 1.68 0.616 2.73 6.27e-3 0.477 2.89
## 8 Olhos D~ Milho ~ 2.49 0.605 4.12 3.85e-5 1.31 3.68
## 9 Pontal Campo ~ 0.572 0.178 3.22 1.28e-3 0.224 0.921
## 10 Pontal Campo ~ 0.628 0.171 3.67 2.46e-4 0.292 0.963
## 11 Pontal Cana-d~ 0.0815 0.200 0.408 6.83e-1 -0.310 0.473
## 12 Pontal Mata d~ 0.845 0.161 5.23 1.66e-7 0.528 1.16
## 13 Pontal Milho ~ 0.916 0.174 5.28 1.32e-7 0.575 1.26
## 14 Pontal Solo E~ 0.112 0.188 0.598 5.50e-1 -0.256 0.481
## 15 Alto Fo~ Campo ~ -0.0557 0.319 -0.175 8.61e-1 -0.681 0.569
## 16 Alto Fo~ Campo ~ -0.596 0.391 -1.52 1.28e-1 -1.36 0.171
## 17 Alto Fo~ Cana-d~ 0.932 0.306 3.05 2.33e-3 0.332 1.53
## 18 Alto Fo~ Mata d~ 1.83 0.468 3.92 8.71e-5 0.918 2.75
## 19 Alto Fo~ Milho ~ 1.12 0.302 3.72 2.00e-4 0.531 1.72
## 20 Alto Fo~ Solo E~ 0.0752 0.348 0.216 8.29e-1 -0.606 0.756
```

```
# summarize results for the whole population by averaging
```

```
d3 <- d2 %>%
```

```
  dplyr::group_by(term) %>%
```

```
  dplyr::summarize(n = n(),
```

```
                    mean = mean(estimate),
```

```
                    ymin = mean - 1.96 * sd(estimate)/sqrt(n-1),
```

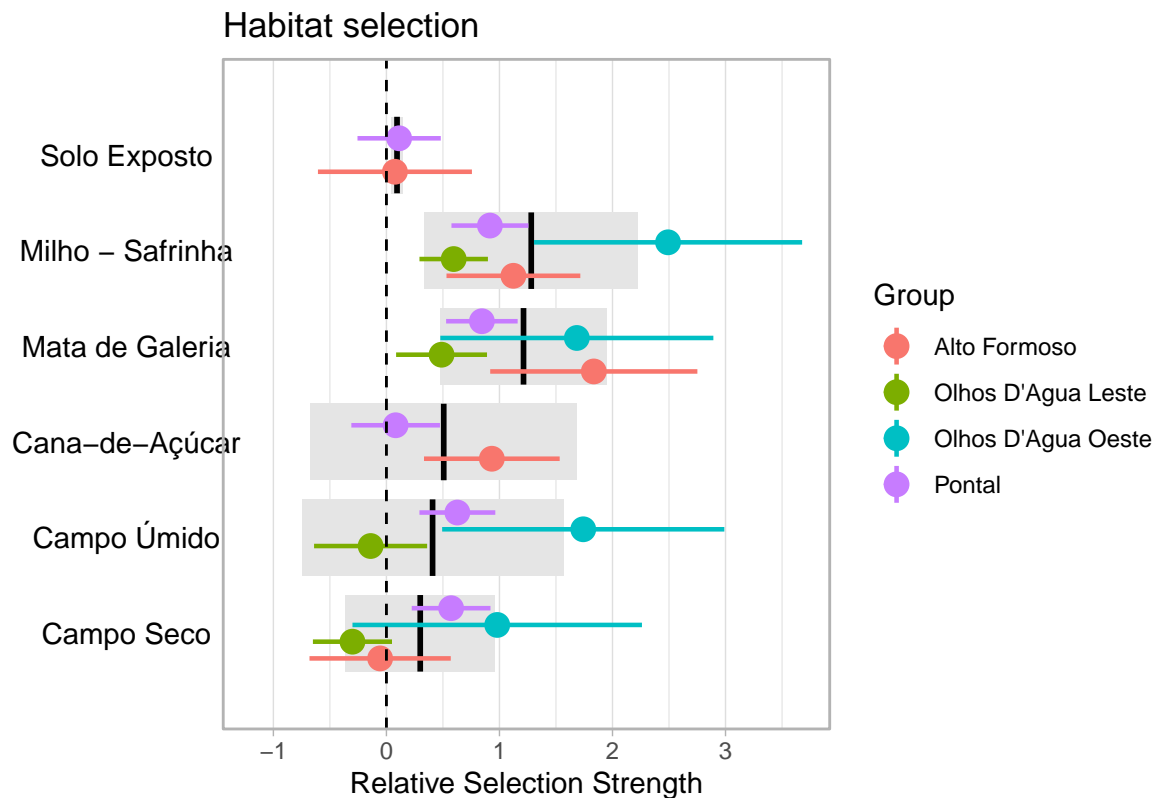
```

      ymax = mean + 1.96 * sd(estimate)/sqrt(n-1)) %>%
dplyr::mutate(x = 1:n())

# plot results for all individuals and the population
p1 <- d2 %>%
  ggplot(., aes(x = as.numeric(term), y = estimate, group = name, col = name)) +
  geom_rect(mapping = aes(xmin = x - .4, xmax = x + .4, ymin = ymin,
                        ymax = ymax), data = d3, inherit.aes = FALSE, fill = "grey90") +
  geom_segment(mapping = aes(x = x - .4, xend = x + .4,
                          y = mean, yend = mean), data = d3, inherit.aes = FALSE, size = 1) +
  geom_pointrange(aes(x = as.numeric(term), ymin = conf.low, ymax = conf.high), position = position_dodge2,
                  size = 1) +
  geom_hline(yintercept = 0, lty = 2) +
  geom_text(data = d3, aes(x = x, label = term), y = -2.3, inherit.aes = FALSE) +
  labs(x = "", col = 'Group', y = "Relative Selection Strength",
       title = 'Habitat selection') +
  ylim(-1.2, NA) +
  scale_x_discrete(breaks = pop.lu.summ$x, label = rep("", length(pop.lu.summ$x))) +
  coord_flip(clip = "off") +
  theme_light() +
  theme(plot.margin = unit(c(1,1,1,6), "lines"))
p1

```

```
## Warning: Removed 1 rows containing missing values (geom_pointrange).
```



```

# save
ggsave(filename = "ssf_all_individuals.png", plot = p1, path = "results",

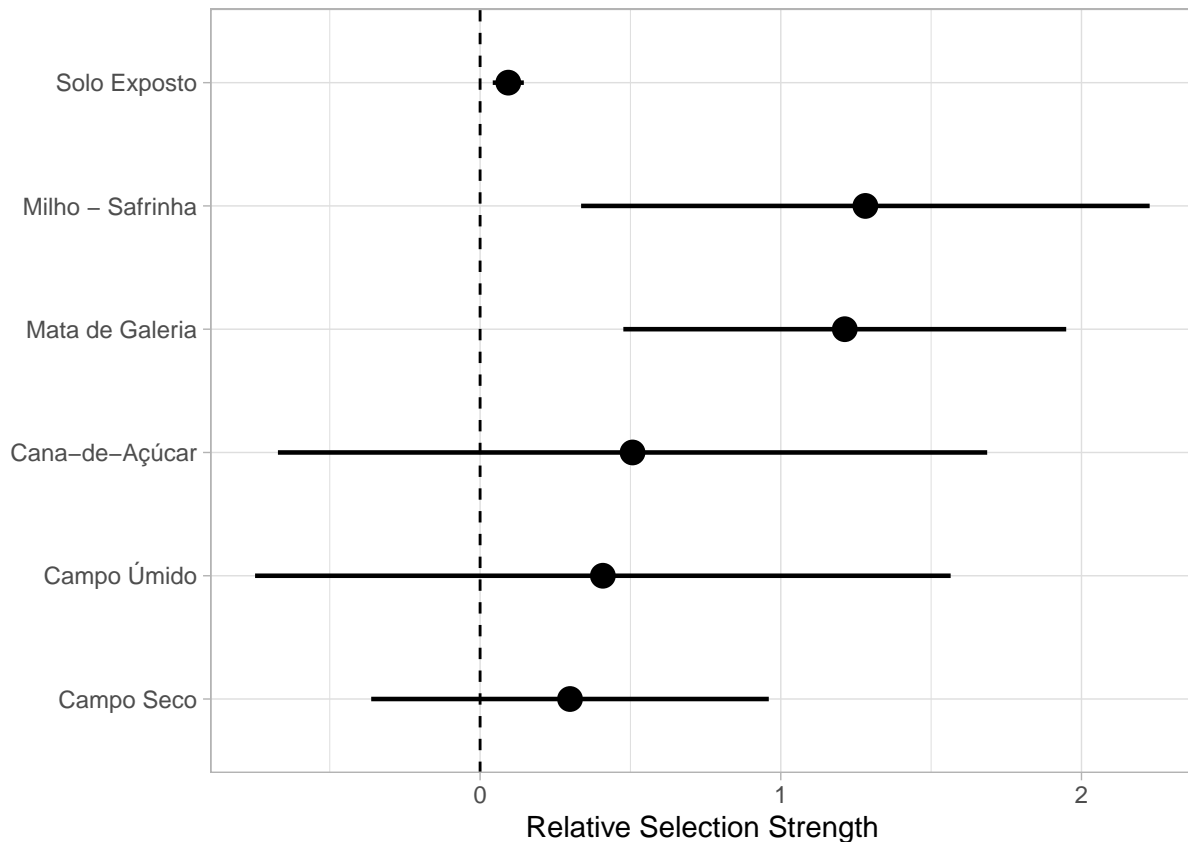
```

```
width = 20, height = 17, units = "cm", dpi = 300)
```

```
## Warning: Removed 1 rows containing missing values (geom_pointrange).
```

```
# for for the population only
```

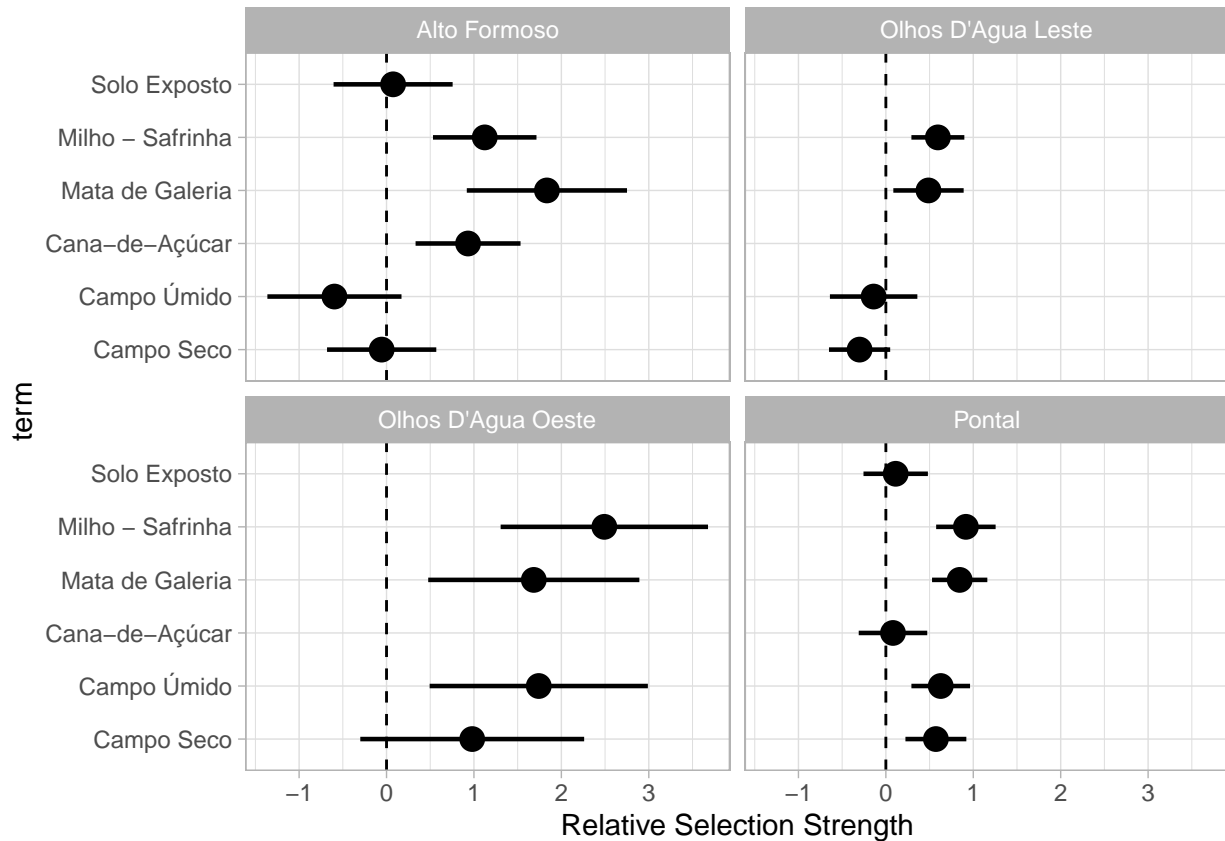
```
p2 <- d3 %>%
  ggplot(., aes(x = term, y = mean)) +
  geom_pointrange(aes(ymin = ymin, ymax = ymax), position = position_dodge(width = 0.7), size = 0.8) +
  geom_hline(yintercept = 0, lty = 2) +
  labs(x = "", y = "Relative Selection Strength") +
  theme_light() +
  coord_flip()
p2
```



```
# for each individual
```

```
m.each <- d2 %>%
  ggplot(aes(x = term, y = estimate)) +
  geom_pointrange(aes(ymin = conf.low, ymax = conf.high),
    position = position_dodge(width = 0.7), size = 0.8) +
  geom_hline(yintercept = 0, lty = 2) +
  facet_wrap(~name) +
  labs(y = "Relative Selection Strength") +
  theme_light() +
  coord_flip()
```

```
m.each
```



```
ggsave(filename = "ssf_each_individual.png", plot = m.each, path = "results",
        width = 20, height = 20, units = "cm", dpi = 300)
```

```
# plot
```

```
used.available <- mov.track.rsp.all.nonNA %>%
  dplyr::mutate(trk = map(data, function(d) {
    d %>%
      dplyr::mutate(classes.corr = factor(classes.corr, levels = sort(unique(classes.corr))) %>% releve
  }))) %>%
  dplyr::select(-data) %>%
  tidyr::unnest_legacy() %>%
  dplyr::mutate(use.ava = factor(case_, levels = c(F, T), labels = c("Available", "Used")),
               name = as.factor(name),
               classes.corr = as.factor(classes.corr))
```

```
## Warning in bind_rows_(x, .id): Unequal factor levels: coercing to character
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```
## Warning in bind_rows_(x, .id): binding character and factor vector,
## coercing into character vector
```

```

total <- used.available %>%
  dplyr::group_by(name, use.ava) %>%
  dplyr::summarise(total = n())

prop <- used.available %>%
  dplyr::mutate(use.ava = factor(case_, levels = c(F, T), labels = c("Available", "Used")),
    name = as.factor(name),
    classes.corr = as.factor(classes.corr)) %>%
  dplyr::group_by(name, use.ava, classes.corr) %>%
  dplyr::summarise(n = n()) %>%
  dplyr::left_join(total, by = c("name", "use.ava")) %>%
  dplyr::mutate(proportion = n/total)

# export table
prop %>%
  readr::write_csv("results/table_proportion_use_availability.csv")

# plot
prop.plot <- prop %>%
  ggplot() +
  geom_bar(aes(x = classes.corr, y = proportion, fill = use.ava),
    stat = "identity", position = position_dodge()) +
  facet_wrap(~name) +
  coord_flip() +
  labs(x = "", y = "Proportion of use/availability", fill = "") +
  scale_y_continuous(labels=scales::percent)

ggsave(filename = "proportion_use_available.png", plot = prop.plot, path = "results",
  width = 20, height = 20, units = "cm", dpi = 300)

# perform RSF considering the whole range of each individual

# include variation along the day

# Plot the functions
curve(cos(x*2*pi), from = -2, to = 2)
curve(cos(x*4*pi), lty = 2, add = T)
curve(0.5*sin(x*2*pi), col = 2, add = T)
curve(0.5*sin(x*4*pi), col = 2, lty = 2, add = T)

```

