

# Series Temporales

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```
library(readr)
library(dplyr)
library(ggplot2)
library(ggpubr)

covid_mexico <- readRDS('../data/covid_mexico.RDS')

min(covid_mexico$date)

## [1] "2020-01-01"
max(covid_mexico$date)

## [1] "2023-08-02"
summary(covid_mexico$date)

##           Min.          1st Qu.          Median          Mean          3rd Qu.          Max.
## "2020-01-01" "2020-11-23" "2021-10-16" "2021-10-16" "2022-09-08" "2023-08-02"
length(covid_mexico$date)

## [1] 1310
1310/365 #3.5 años

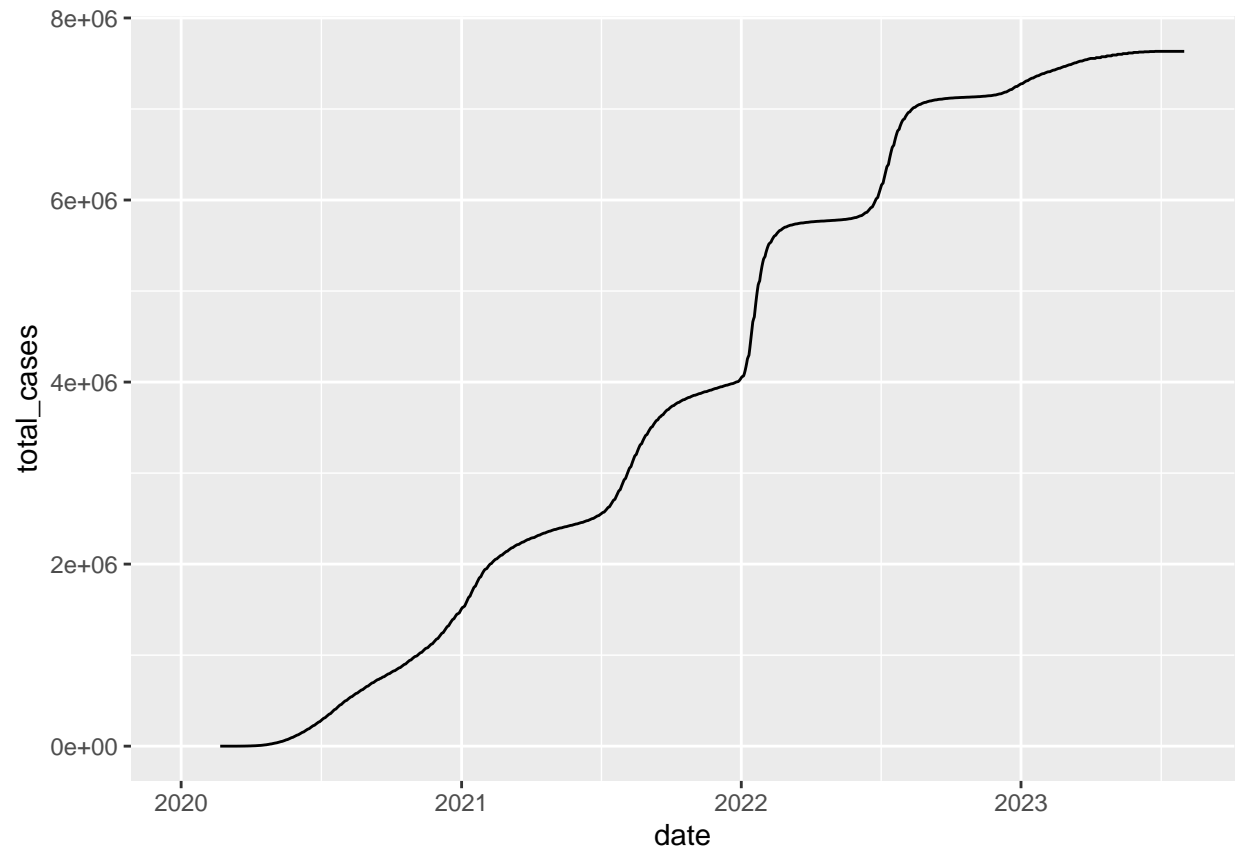
## [1] 3.589041
deltat(covid_mexico$date) # intervalo de fechas

## [1] 1
diferencia_casos <- diff(covid_mexico$total_cases) %>%
  na.omit()

head(diferencia_casos,20)

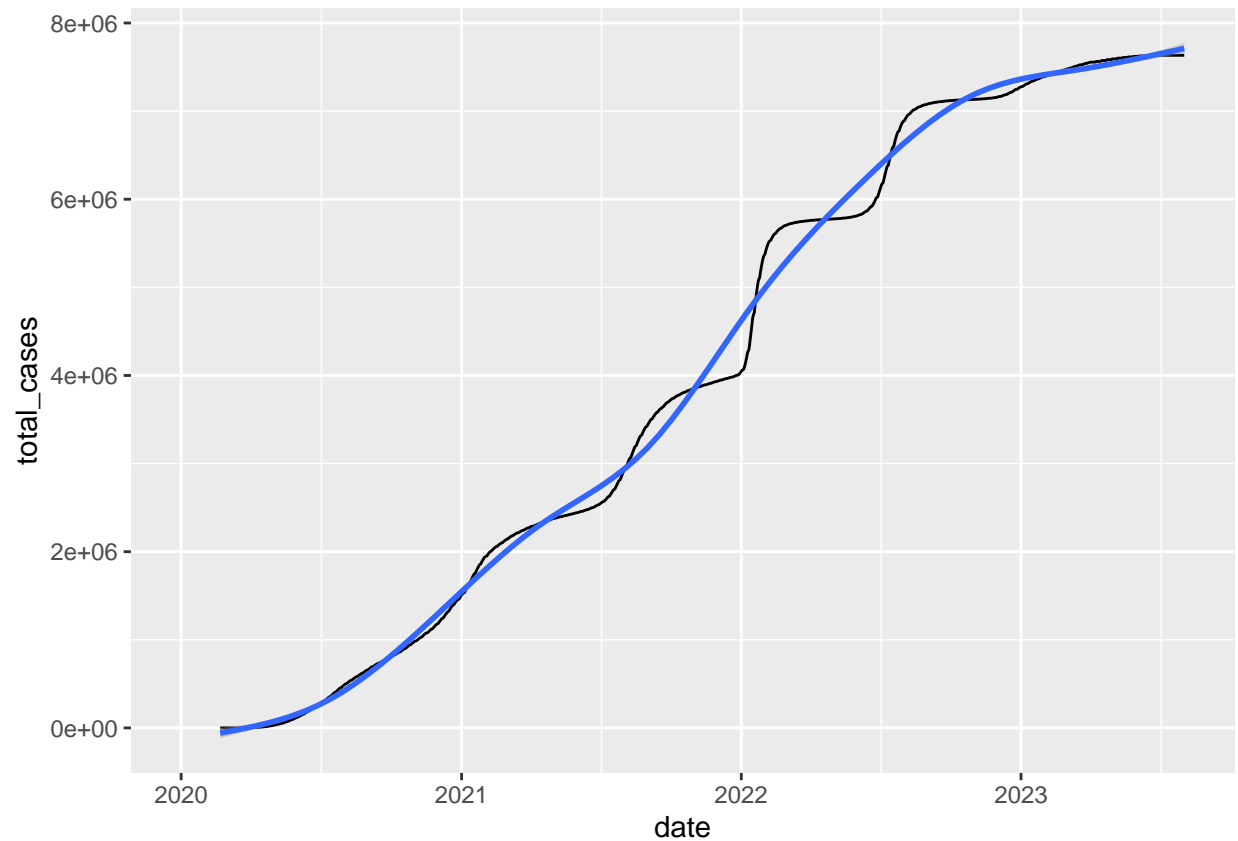
## [1] 0 0 0 0 0 0 0 0 3 2 2 2 5 9 10 11 6 7 8 5 17
ggplot(covid_mexico, aes(x = date, y = total_cases)) +
  geom_line()

## Warning: Removed 51 rows containing missing values (‘geom_line()’).
```



```
ggplot(covid_mexico, aes(x = date, y = total_cases)) +  
  geom_line() +  
  geom_smooth()
```

```
## 'geom_smooth()' using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'  
## Warning: Removed 51 rows containing non-finite values ('stat_smooth()').  
## Warning: Removed 51 rows containing missing values ('geom_line()').
```



```
ggplot(covid_mexico, aes(x = date, y = total_cases)) +
  geom_line() +
  geom_smooth() +
  xlab('Fecha') +
  ylab('Casos Totales') +
  theme_bw()
```

```
## 'geom_smooth()' using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'
## Warning: Removed 51 rows containing non-finite values ('stat_smooth()').
## Warning: Removed 51 rows containing missing values ('geom_line()').
```

