IF... you converted your data to time series...

Suppose you decide to convert your dataset to a time series object.

```
library(itsmr)              # load data and functions

xt <- ts(wine,              # data -> time series
         start = c(1980,1), # Jan 1980
         end = c(1991,10),  # Oct 1991
         frequency = 12)    # 12 observations/year

plot.ts(xt, main = "happy wine :)")
```

Let's make a function to produce this plot automatically, and let's also modify the axis to have better time resolution.

```r
plot.wine <- function(){

  plot.ts(xt, main = "happy wine :)", xaxt = 'n')
  axis(1, 1980:1991, 1980:1991)

}
```

Now, suppose we want to plot a line of best fit. How do we get it to show up?

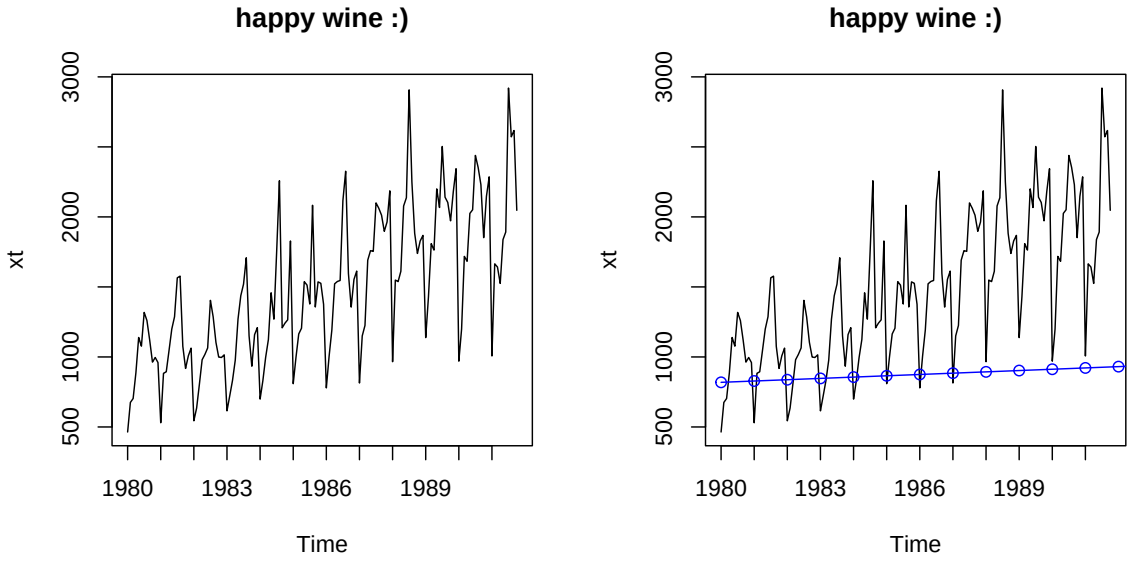
```r
m.pr <- trend(wine,1) # polynomial regression


par(mfrow = c(1,2))

plot.wine()
lines(m.pr, col = "blue") # o no where is it

# plot.wine()
# lines(1980:1991, m.pr, col = "blue") # fail

plot.wine()
lines( 1980:(1980+length(m.pr)-1), m.pr, col = "blue") # too shallow
points(1980:(1980+length(m.pr)-1), m.pr, col = "blue") # years not months!
```

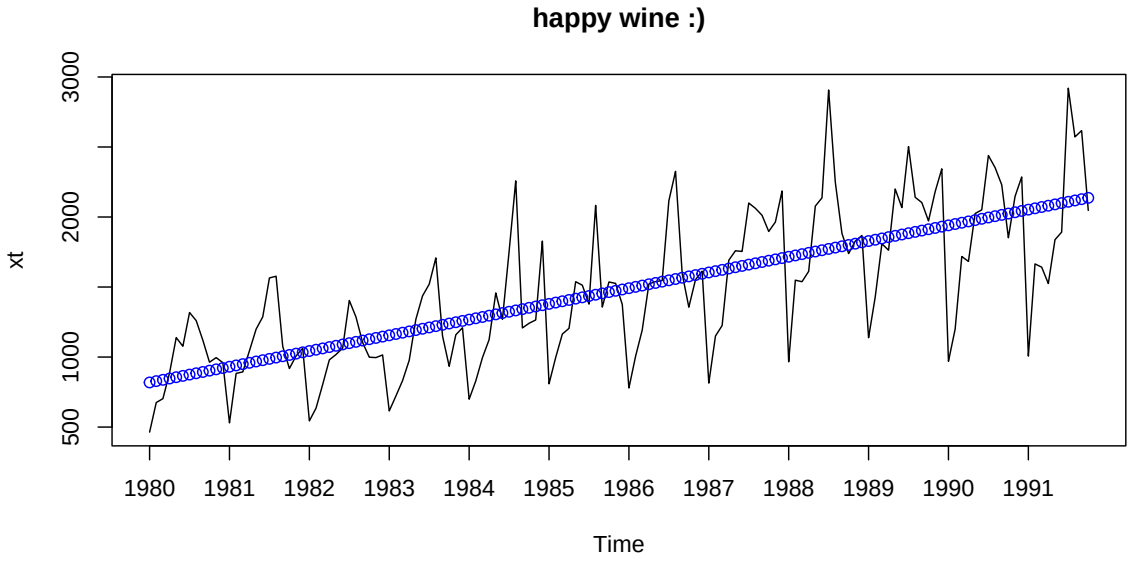


We need to convert our trend estimate $\hat{m}_t$ to a time series object as well! (With the same set of time points as our series x_t)

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

m.pr <- ts(m.pr,              # estimate -> time series
           start = c(1980,1), # Jan 1980
           end = c(1991,10),  # Oct 1991
           frequency = 12)    # 12 observations/year

plot.wine()
points(m.pr, col = "blue")    # use lines (not points) on your assignment
```



You'll need to go through this process for most ITSMR function outputs. I'd recommend making a `ts.wine(x)` function or something. But you generally *don't* need to do this when you calculate *residuals*, since

$$\text{time series} - \text{time series of same length} = \text{time series}$$