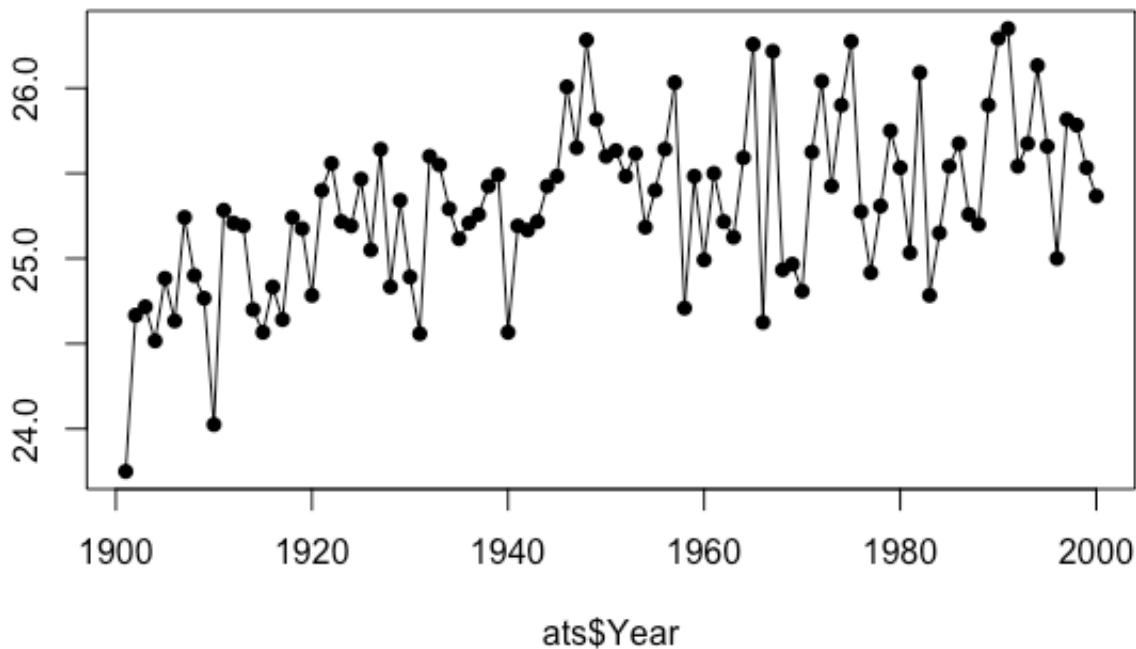


Here is a plot for the `ats` data, where the x axis is year and y axis is the temperature in Key West, Florida for the 20th century.



The correlation coefficient between successive years is 0.326.

Repeat the calculation of correlation coefficient 10000 times by randomly permuting the time series temperature data. The fraction of the calculated correlation coefficients greater than the original data is 0.00005.

The approximate p-value 0.0005 is less than the significance level of 0.05, so we should reject the null hypothesis that there is no difference between the correlation coefficient of randomly permuted successive temperature and the correlation coefficient of true successive temperature. We conclude that there is a positive correlation between temperature of successive years.