Import the files cachuma and losprietos. These files contain precipitation data from the Lake Cachuma Dam on the Santa Ynez River, Santa Barbara County, CA; and for the Los Prietos Boys Camp, which is about 8 km up the Santa Ynez River from the dam. The columns in each data set represent water years 88/89 through 0/1. The rows represent the months within each water year, from October through September. These data are in inches to the hundredth.

Notice that there are several months with missing values (NA) from the Los Prietos station. Develop a regression relationship between rainfall from Cachuma and Los Prietos and use the results to generate predicted values of rainfall for the missing data. You will need to remove the NA points prior to developing your model. Plot your predicted values on the overall regression plot using a different symbol. Report your prediction intervals for each of these new values. Interpret all of your regression output. Plot the residuals from the regression model against X. Comment on and interpret this plot.

PART II

1. Write a function that generates and plots confidence bands and prediction bands for a simple linear regression model. Use your function to plot the confidence and prediction bands on the regression plot from your results in PART I. Make your function generic so that it can be used in the future with other datasets.