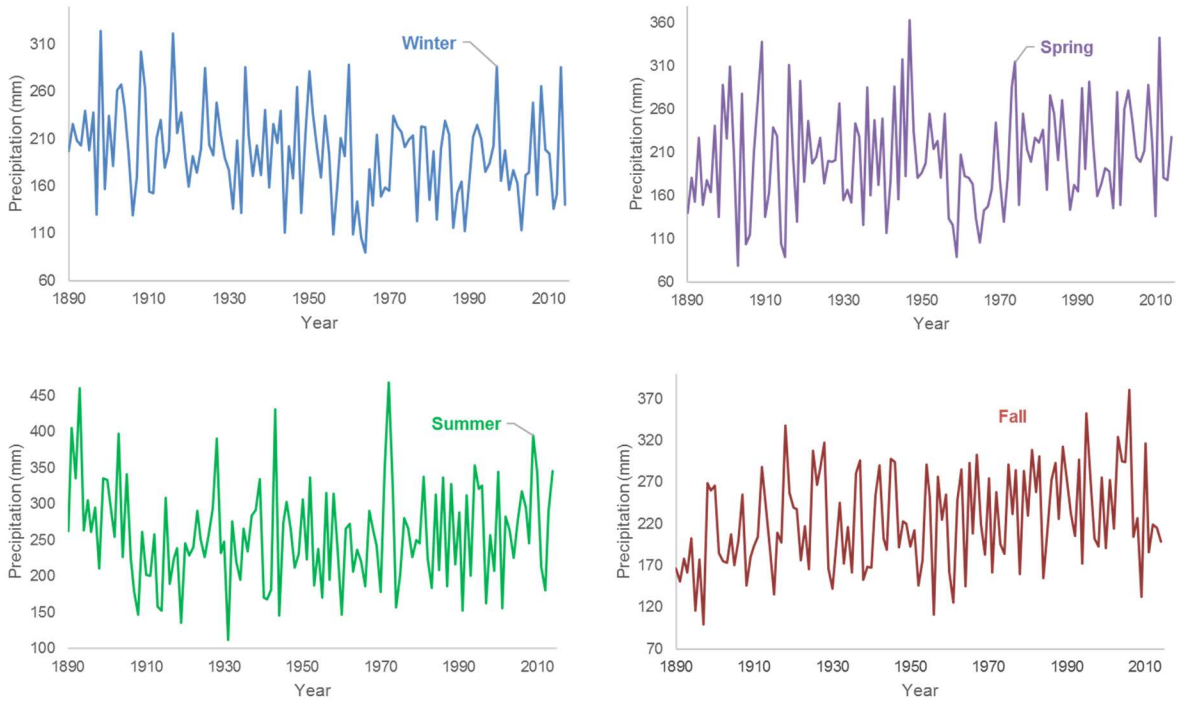
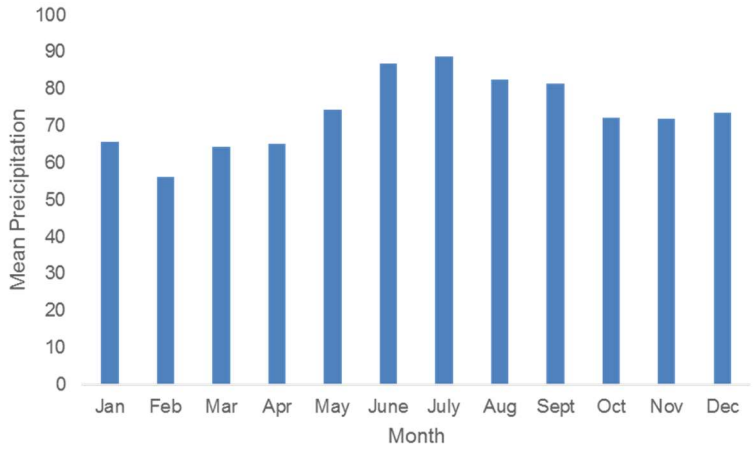
Laboratory 2 - Introduction to climate data analysis: Precipitation

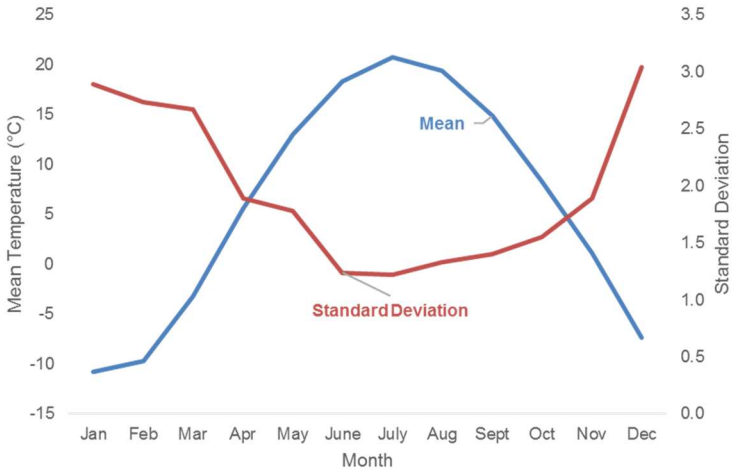
2.



By looking at the above graphs, it is easy to see that winter and spring have the least amount of rainfall compared to summer and fall. On average, it seems like there was more rain or snowfall in the years before the 1960's. There was a major decrease in the amount of rainfall after this period in the 1960's. After which the amount of rainfall was steady, before increasing in the mid 1990's, and again after the 2000's. The largest amount of rainfall in the springtime over the time period was around 1910 and the late 1940's, after which there was a small amount of rainfall each year during spring until 2010. Between the large rainfall in the late 1940's, and the above average amount of rainfall in 1970, there seemed to be a period of drought. During these years, the least amount of rainfall was about 80 mm of rain for the entire spring season. The summer season has the most amount of rainfall of all the seasons throughout the 120-year time span. The largest amount of rainfall during summer happened before 1970. The largest amount of precipitation being about 450 mm during the early 1990's and 1970. The rest of the years seemed about average with one another, with the exception of the time period around 1910, where there seemed to be a drought. Another drought occurred in 1930, where the precipitation level only reached just above 100 mm. The fall season has similar patterns to that of spring, in that the amount of precipitation has averagely increased over the last 120 years. There is no clear period of drought or an abnormally large amount of rainfall. The largest amount of precipitation recorded was around 2005, where the precipitation reached 370 mm.

3.





The annual cycle of precipitation in Ottawa is cyclical as to the amount of mean precipitation. There is a dip in the amount of precipitation between January and February, before the amount of precipitation rises again. The summer months, June and July, have the most amount of rainfall, while fall and winter have about the same amount of precipitation. Comparing the mean precipitation and mean temperature charts, there is a similarity between the cycles of the two graphs. As the temperature increases, the amount of precipitation increases as well. The warmest months also have the largest amount of rainfall. Fall and spring have less heat and less precipitation. However, while the mean temperature graph continues to decrease for the winter months, the mean precipitation graph increases. During winter, the form of precipitation would be snowfall, as the temperature continues to decrease. The months that are more variable from year to year however are also the winter months, as they have the largest standard deviation. This could mean that the hypothesis of increasing temperature matches that of increasing precipitation for some years, but not for others as the amount of snowfall is set to vary by a large amount.