1. What is the total variance of the original variables and what is the total variance of the PCs.
2. What is the covariance between the first PC and the second PC?
3. Plot the scores plot using the first and second PCs. In your scatter plot, use red dots for the first 20 samples (rows 1 to 20) in the raw data table and use blue dots for the remaining 20 samples (rows 21 to 40
4. How many PCs do you need to keep in order to keep 75% of the variance in the data?
5. Plot the loadings plot. Standardize each variable and perform PCA again and answer the following questions.
6. What is the total variance of all of the PCs. Is it equal to the total variance of the original variables before standardization?