## STAT5103 Assignment 4 (Due date: Friday Nov 23, 11:59pm) [Provide all your R-code]

Data: US Crime in 50 states (sample size = 50)

## Variables

 $X_1$ : land area

X<sub>2</sub>: Population 1985

 $X_3$ : murder

 $X_4$ : rape

*X*<sub>5</sub>: robbery

 $X_6$ : assault

 $X_7$ : burglary

 $X_8$ : larceny

 $X_9$ : auto theft

 $X_{10}$ : U.S. states region number

 $X_{11}$ : U.S. states division number

Perform a factor analysis on the variables  $X_3$  to  $X_9$  in the US crime data.