

Lab Exercises

1. From the dataset **Auto** in the package **ISLR**, find the following summary statistics for variable *horsepower* for the vehicles with American Origin:
 - a. Minimum
 - b. Quartile 1
 - c. Median
 - d. Mean
 - e. Quartile 3
 - f. Maximum

2. Consider the following table:

X_i	P_i
23	0.6250000
45	0.1734694
89	0.2015306

Do the following:

- a) Prove that the above distribution is probability distribution
 - b) Find $E(X)$
3. Verify empirically the Chebyshev's theorem for the variable *displacement* for 2 standard deviations in dataset **Auto** in the package **ISLR**.
4. In a large class, the probability of randomly selecting a woman student is 0.65. The probability of randomly selecting a student who is a woman and who earned a grade A is 0.25. If you randomly select a student who is a woman, what is the probability that she earned a grade A?
5. A large-scale survey finds that 80% of college students enjoy eating chocolate ice cream, 65% of college students enjoy eating mango ice cream, and 55% of college student enjoy eating both chocolate and mango ice cream. What proportion of college students enjoys eating chocolate or mango ice cream?