Assignment 2

Data: Provided is a data set containing information about 238 patients. The meaning of the column names is:
Id: number of the patient
Clinic: Indicates which methadone treatment clinic the patient attended (coded 1 or 2).
Status: Indicates whether the patient dropped out of the clinic (1) or was censored (0).
Prison: Indicates whether the patient had a prison record (1) or not (0).
Dose: A continuous variable for the patient's maximum methadone dose (mg/day).
Survt: The time (in days) until the patient dropped out of the clinic or was censored.

Questions:
1.) Define a Cox Proportional Hazard Model (M1) for the covariates: clinic, prison, dose.

2.) Perform a regression analysis for the model M1 and provide a discussion of the results. Remark: Follow the instructions given in Tutorial 8.

3.a) Check the proportional hazard assumption of M1 and adjust the model if necessary.
3.b) Visualize and discuss the Schoenfeld residues for the covariates.
3.c) Provide a discussion of the results.
3.d) Discuss the difference of 3.a) and 2.).

4.) Define a Cox Proportional Hazard Model (M2) for the covariate 'dose' and stratify on 'prison'. Provide a discussion of the results.

5.) 'Dose' is a continuous covariate. In order to stratify on 'dose' one needs to categorize this variable first.
5.a) Decide if 2 or 3 categories are preferred and how to define the corresponding dose-intervals based on your interpretation of the data.
5.b) Define a Cox Proportional Hazard Model (M3) for the covariate 'prison' and stratify on 'dose'. Provide a discussion of the results.

Remarks:
A) Submit documented R code to produce the results. Use .R as an extension of this file.
B) Submit a report (e.g. a word or latex document) in pdf version that contains a discussion of the results, visualization and tables (for tables you can make a screen shot and include it as figure).