

R Report I

FORMAT

- * Use complete sentences and proper grammar to answer all questions.
- * Use R Markdown to create an html document.
- * Code should not be in the body of the text, so be sure to add `echo = FALSE` in the preface to your R chunks. All code should be included at the end of the homework, as an appendix.

I. Write a short introduction about yourself. Please include the following:

- Name & Hometown
- What field of study you are interested in?
- What year are you at UC Davis (freshman, sophomore, etc.)
- Why are you taking STA 32?
- Tell me about one or two of your favorite hobbies.
- Coming into this class, how did you define statistics?

II. Upload the dataset “Patients.csv” from Canvas.

- (a) List the names of the columns.
- (b) Find the number of rows in the dataset.
- (c) Use the function `summary` on the dataset and display the results. Describe how this function treats categorical columns, and how it treats numeric columns.
- (d) Find the mean of the column `age`.
- (e) Find and display the average and standard deviation for `age` for each `gender`.
- (f) Create a boxplot of the age for each marital status (there should be 5 sub-plots). Describe what the graph displays.
- (g) Create a boxplot of the height for each obese status (there should be 4 sub-plots). Describe what the graph displays.
- (h) Choose a categorical variable and create a pie chart. Describe the graph.
- (i) Construct a histogram using the variable of your choice. Describe the graph.

III. Answer the following questions about functions.

- (a) We used a couple of different ways to find quartiles in the class. Do some research and explain the two functions and why they differ: `fivenum` and `quantile`.
- (b) Create a function that takes in a vector, and subtracts the mean and divides by the standard deviation (I.e., for every x_i finds $(x_i - \bar{x})/s$). Then returns the standard deviation of the result. Test the function on the following vector: `X = 1:100`. Use `echo=TRUE` in your code to display your function within the document.