1. I saved the data to a excel spreadsheet hw1.csv in one column with the header of Days, imported it into R, then I put the data into a vector called Days. Output below:

Application

Description automatically generated

1. The following histogram has bars equivalent to 1 day. There aren’t any drastic outliers. The shape of the data is right skewed. The center is around 5, and the range/spread is between 2 and 15.

Chart, histogram

Description automatically generated

1. Since the data is right skewed, the best single number summary for the center is the median of 5.63, and the best single number summary of the spread is the middle half of the data Q3 – Q1= 7-4 = 3

|  |  |
| --- | --- |
| Mean | 5.63 |
| Standard Deviation | 2.74379 |
| Median | 5 |
| 1st Quartile | 4 |
| 3rd Quartile | 7 |
| Minimum | 2 |
| Maximum | 15 |

1. A.) 95.22096%

B.) 69.97171%

Graphical user interface, text, application

Description automatically generated

R Code

rm(list=ls()); cat("\014")

#Set directory

setwd("C:/Users/HP/Documents/555")

getwd()

#Import spreadsheet

hospital = read.csv("hw1.csv", header = TRUE)

hospital

Days <- hospital$Days

Days

# 2 Create Histogram

hist(Days,main = "Duration of days in Hospital", col = "blue",breaks = seq(min(Days),max(Days),by =1))

#3

minimum <- min(Days)

minimum

maximum <- max(Days)

maximum

sd(Days)

summary(Days)

mean(Days)

median(Days)

#4

#less than 10

pnorm(10,5,3)

#less than3

pnorm(3,5,3)

#between 10 and 3 (10 - 3)

bw\_3\_10 <- pnorm(10,5,3) - pnorm(3,5,3)

bw\_3\_10