

Statistics 624: Statistical Computing

Homework # 1

Due: Thursday, 6 Sep., 8am

In this assignment, please complete, organize, and turn in **electronically** to `stat624@stat.byu.edu`.

- Create your directory structure. Provide an outline or some other organized description of your intended directory structure.
- Lifetimes of the lamps in LCD projectors follow an exponential distribution with a mean of 1200 hours. Plot the pdf of lifetimes of LCD projectors over an appropriate range of lifetimes.
- IQ scores follow a normal distribution with a mean of 100 and a standard deviation of 15. Plot the pdf of IQ scores and draw a red horizontal line at Dr. Reese's IQ score of 150.
- The probability of a randomly selected commercial truck driver being fatigued to the point of impairment is 0.32. Plot the pdf of the distribution of the number of drivers who are fatigued to the point of impairment in the next 128 drivers, assuming that drivers are independently selected and that the probability of impairment is constant across the drivers.

- The gestation times of bowhead whales are important to wildlife biologists. In order to study these gestation times, measurements were made on bowhead fetuses. The measurements included the length of the fetus and the length of the fetus's mother. The data are below:

whale	mom	fetus
n99B7	15.4	4.0
n99B6	12.6	13.0
fed4398	13.0	13.4
fed4392	16.0	23.5
t86ww2	17.7	27.3
t78ww1	16.3	37.5
t96b5	15.2	58.5
t92b7	14.2	75.0
t92b8	15.7	84.0
t92kk1	15.2	113.0
t83kk1	14.7	115.0
t76b5	17.3	128.0
t92b13	15.0	145.0
t88kk1	14.9	150.0
t87n1	15.2	160.0
t96b11	14.3	160.0
t93b20	15.5	163.0
t90g4	15.2	366.0
t90b4	14.9	390.0
n99B18	13.0	399.0
t89b2	14.7	401.0
t87b5	15.7	405.0
t95b8	15.2	410.0

Read these data in and use the `scatter.smooth` function to plot the data.