> set.seed(0)

> n <- 1000

> R = c(0.5, 2)

> prob <- c(0.7, 0.3)

> rain <- sample(R, n, replace = TRUE, prob = prob)

>

> comm\_dr = rexp(n = n, rate = 1/rain) + 1

> comm\_tr = rexp(n = n, rate = 1) + 3

>

> x.range = range(c(comm\_dr, comm\_tr))

> breaks = seq(min(x.range), max(x.range), length = 20)

>

> setwd("D:/Documents (Louis Booth)/R/Graphics")

> pdf("histograms with lines.pdf")

>

> hist(comm\_dr, breaks = breaks, probability = TRUE, xlim = x.range,

+ col = "red", xlab = "Commute Time",

+ main = "Comparison of Commute", ylim = c(0, 1))

>

> hist(comm\_tr, breaks=breaks, probability=TRUE, col=rgb(1,0,0,0.2), add=TRUE)

>

> lines(density(comm\_dr), lwd=2, col=4)

> lines(density(comm\_tr), lwd=2, col=3)

> legend("topright", legend=c("Drive","Train"), lty=1, lwd=2, col=4:3)

>

> dev.off()

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>

> mean((comm\_dr - comm\_tr) > 0)

[1] 0.081

> var(comm\_dr) - var(comm\_tr)

[1] 0.5183485