**Uniform distribution using R**

*# generate 40 random variables, uniformly distributed between -1 and 1*

runif(40, min = -1, max = 1)

rand.unif <- runif(10000, min = -2, max = 0.8)

hist(rand.unif, freq = FALSE, xlab = 'x', density = 20)

The mean, μ, for the uniform probability distribution given by X∼U(−3,5.5) is 1.25.

What is value of x corresponding to the value that divides the given uniform distribution into two equal parts, or written more formally P(X<?)=0.5.

px.0.5 <- qunif(0.5, min = -3, max = 5.5)

px.0.5

In order to solve the question analytically, we make use of the cumulative probability density function, which is implemented in R for uniform distributions by the punif function. Make sure to set the lower.tail argument to lower.tail = FALSE, as we are looking for the probability to measure values >=4, thus we are interested in the area under the curve right to the value of x=4.

result <- punif(4, min = -3, max = 5.5, lower.tail = FALSE)

result

**Exponential using R**

pexp(2, rate=1/3)

pexp(q, rate = 1, lower.tail = TRUE, log.p = FALSE)

qexp(p, rate = 1, lower.tail = TRUE, log.p = FALSE)

rexp(n, rate = 1)