payoff\_call <- function(price, strike) {

max(price - strike, 0)

}

payoff\_put <- function(price, strike) {

max(strike - price,0)

}

mc1 <- function(payoff\_f, N, spot, strike, maturity, sigma, drift) {

timestep <- 1/250

steps <- round(maturity/timestep)

p1 <- (drift-0.5\*sigma\*sigma)\*timestep

p2 <- sigma\*sqrt(timestep)

ss <- replicate(N, spot)

step <- 1

repeat {

ss <- ss\*rlnorm(N,p1,p2)

step <- step + 1

if (step>steps) {break;}

}

payoff <- sapply(ss, payoff\_f, strike)

result <- exp(-drift\*maturity)\*mean(payoff)

result

}

print(mc1(payoff\_call,100,100,100,1,0.15,0.02))