1. CODE

# M: number of samples

# n: sample size

M = 20

n = 30

mu = 100

sigma = 15

for(m in 1:M){

x = rnorm(n, mean = mu, sd = sigma)

xbar = mean(x)

ME = 1.96\*sigma/sqrt(n)

lowerLomit =xbar-ME

UpperLimit = xbar+ME

Outside = ifelse(mu<lowerLomit | mu>UpperLimit, 1, 0)

cat("Sample", m, ": ",

round(c(xbar-ME, xbar+ME), 2), "\t", Outside, "\n")

}

CODE OUTPUT

Table

Description automatically generated with low confidence

Text

Description automatically generated