

PSYC 2317: Statistical Methods for Psychology

Tarleton State University

Homework 4

Fall 2019

1. Suppose you have a collection of scores that is normally distributed with $\mu = 50$ and $\sigma = 18$, and suppose we draw samples of size $N = 36$.
 - (a) What proportion of the samples will have means greater than 53?
 - (b) What proportion of the samples will have means less than 44?
 - (c) What is the probability that the sample will have a mean between 49 and 51?
2. For a normal population with $\mu = 200$ and $\sigma = 20$,
 - (a) What is the probability of obtaining a sample mean greater than 210 for a sample of $N = 4$ scores?
 - (b) What is the probability of obtaining a sample mean greater than 210 for a sample of $N = 16$ scores?
 - (c) For a sample of $N = 25$ scores, what is the probability that the sample mean will be within 5 points of the population mean?

Note: There are only two problems this week. The rest of your efforts should be applied toward completing the Exam 1 review before class on Tuesday, 9/24. You can download the review from Canvas.