

# PSYC 2317: Statistical Methods for Psychology

Tarleton State University

Unit 4 Homework

Spring 2020

---

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, 2/18. You can download the review from Canvas.