Name:

Collaborators:

Instructions:

You must submit your worksheet individually by end-of-class or end-of-day. Your name must exist in your worksheet and the names of your collaborators.

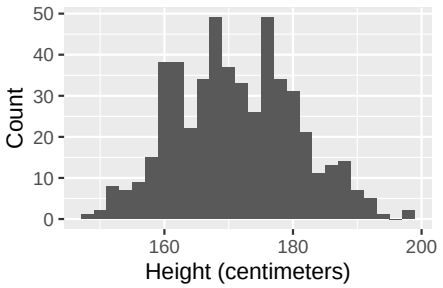
Worksheets are marked mostly on completion, and partially on correctness. It will be marked either pass or fail, there will no detailed feedback on worksheets, and no opportunities for revisions and make-up.

Determine Confidence Intervals for Means

1. Heights of Adults

Researchers studying anthropometry collected body measurements, as well as age, weight, height and gender, for 507 physically active individuals. Summary statistics for the distribution of heights (measured in centimeters), along with a histogram, are provided below.

Min	Q1	Median	Mean	Q3	Max	SD	IQR
147.2	163.8	170.3	171.1	177.8	198.1	9.4	14



a. Check if the conditions are satisfied.

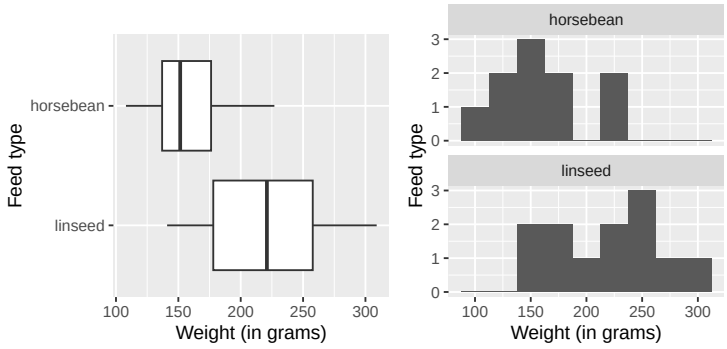
b. Compute the 90% confidence interval for the average heights of adults.

c. Interpret the confidence interval computed in Part (b).

2. Chicken Diet

An experiment was conducted to measure and compare the effectiveness of various feed supplements on the growth rate of chickens. Newly hatched chicks were randomly allocated into groups, and each group was given a different feed supplement. We consider chicks that were fed horsebean and linseed. Below are some summary statistics from this dataset along with box plots showing the distribution of weights by feed type.

Feed type	Mean	SD	n
horsebean	160.20	38.63	10
linseed	218.75	52.24	12



a. Describe the distributions of weights of chickens that were fed horsebean and linseed.

b. Compute the 90% confidence interval for the difference in means.

c. What is the conclusion? Interpret the confidence interval computed in Part (b).

References

1. Speegle, Darrin and Clair, Bryan (2021) Probability, statistics, and data: A fresh approach using r, Chapman; Hall/CRC.
2. Diez DM, Barr CD, Çetinkaya-Rundel M (2012) OpenIntro statistics, OpenIntro.