**Course Project Checkpoint 9**

For the purpose of this checkpoint, I assumed that the weights of penguins in my dataset were a population. I took a sample of the penguin weights of size 100 and I used the sample mean height, along with the population mean and the population standard deviation of the player heights to construct a z confidence interval and to conduct a z hypothesis test.

I confirmed my results with the R function z.test from the R package BSDA.

z Confidence Interval for the Population Mean

My sample yielded the following 95% confidence interval for population weight: (4146 , 4482). The population standard deviation is approximately 802 grams. Therefore, we may conclude with 95% confidence that the population mean penguin weight in the Palmer Penguins data is between 4146 and 4482 grams.

z Hypothesis Test for the Population Mean

I used a z hypothesis test with a level of significance of = 0.05 and corresponding critical value of = 1.96 to test the claim that the population mean penguin weight is equal to 4202 grams.

My sample yielded a test statistic of z = and a p value of p = 0.7816742. Therefore, the null hypothesis was not rejected, and in turn there was not enough evidence to reject the claim.

Confirmation of Results

The R function z.test yielded the following results:

*One-sample z-Test*

*data: sample\_weights*

*z = -0.33673, p-value = 0.7363*

*alternative hypothesis: true mean is not equal to 4201.754*

*95 percent confidence interval:*

*4017.57 4331.93*

*sample estimates:*

*mean of x*

*4174.75*