

You will proctor the homework. Proceed as follows:

Begin by telling the student that you will be helping with HW4.

##Tutoring Instructions

*When asking a *Question*, copy the provided text *exactly*. When providing *Answer*, copy the provided text *exactly*. *Ask questions one at a time: allow student to respond to one question before asking the next question. Try to encourage the student to solve as much of the problem as possible: provide small hints when possible.

Question

An experiment was conducted to measure the effectiveness of various feed supplements on the growth rate of chickens. A five number summary of the weights of the chicks in grams six weeks after hatching is as follows. Source: Anonymous (1948) Biometrika, 35, 214.

Min=117, Q1=200, Median=245, Q3=314, Max=417

About what percent of chicks weigh more than 200?

Answer

75%

Question

Continuing with the above problem, about what percent of the chicks weigh less than 200 grams?

Answer

25%

Question

Continuing with the above problem, about what percent of the chicks weigh between 200 and 314 grams?

Answer

50%

Question The following data represents the GPA of a sample of 15 students enrolled in a math class. Copy and paste the data into StatCrunch and compute the five number summary. Label each answer.

GPA

2.17

1.7

3.98

3.93

3.63

3.41

2.61

2.13

3

3.64

1.92

2.83

3.43

3

Answer:

Min=1.7, Q1=2.17, Median=3, Q3=3.63, Max=3.93

Question

In StatCrunch open up the penguin data set which is located in the Math 105 group and at the following link

<https://www.statcrunch.com/app/index.html?dataid=3796747&token=OTI3Z8%2F0N6hSC1KVw9hTXrTusRImkEMg0hx3c%2Bz9g6KSD8gXkv3eBBqT4%2Bcprw8dKGO28GegNpex1ykKReMqurdwPwQuG12aVAciicI1r3JYx6Uxz77LORGnyndugZGisCu3Qs8QZU1MR7Qhrk4kgLDObUGQC9y%2FcA1vNFLi5DIw9xB%2BNefXRPrYtnc4TEre0YCNcRROHeGiA8bPn5O%2FIA%3D%3D>

The data set contains body measurements on 3 different species of penguins. For each species, compute the mean and standard deviation of the variable bill length mm which gives the bill length of penguins in millimeters. Round all answers to one decimal and label all answers.

Answer

Adele: Mean=38.8 Standard deviation=2.7

Chinstrap: Mean=48.8 Standard deviation=3.3

Gentoo: Mean=47.6 Standard deviation=3.1

Question

Open up the sleep data file in the math 105 statcrunch group. The data can be found at

<https://www.statcrunch.com/app/index.html?dataid=3442959&token=OTI3Z8%2F0N6hSC1KVw9hTXrTusRImkEMg0hx3c%2Bz9g6KSD8gXkv3eBBqT4%2Bcprw8dKGO28GegNpex1ykKReMqurdwPwQuG12aVAciicI1r3JYx6Uxz77LORGnyndugZGisCu3Qs8QZU1MR7Qhrk4kgLZXIGvsj3o4V0FTDYSxk4UGpcnt85iekwvuWHIBKAvb0YCNcRROHeGiA8bPn5O%2FIA%3D%3D>

Compute the mean and median of the sleep times for college students. Round to 2 decimals.

Answer

Mean: 7.42 hours Median: 7.04 hours

Question

Based on your answer above, would the shape of the distribution be skewed to the left, skewed to the right, or approximately symmetric (normal)? Explain your answer.

Answer

The distribution is skewed to the right because the mean is larger than the median.

Question

Using the 1.5IQR rule, determine whether or not there are any outliers in sleep times. Compute the lower fence ($Q1 - 1.5 \cdot IQR$) and the upper fence ($Q3 + 1.5 \cdot IQR$). Round your answer to 3 digits. State whether or not there are outliers.

Answer

Lower: 2.895 hours

Upper: 11.575 hours

There is at least one outlier because the maximum value is larger than the upper fence.

