

Class Exercise

1. Coffee Consumption

A survey was conducted at a local office asking employees how many cups of coffee they consumed over a 5-day work week. The results are presented in the frequency table below:

Cups of Coffee	Number of Employees
0	5
2	14
4	22
6	18
8	12
10	7
12	2

- Calculate the top and bottom 10% percentiles for this data.
- Calculate the three quartiles.
- Calculate and interpret the Interquartile Range (IQR).

2. Laptop Battery Life Comparison

You have a dataset of $n = 24$ data points. Which integer percentiles are not defined for your dataset?

3. Laptop Battery Life Comparison

A tech reviewer tested the battery life (in hours) of two different laptop models, Model A and Model B. Note that the sample sizes for the two models are different.

Model A (20 units tested):

6.2, 6.5, 6.8, 7.0, 7.1, 7.2, 7.4, 7.4, 7.5, 7.7, 7.8, 7.9, 8.0, 8.2, 8.4, 8.5, 8.7, 9.0, 9.2, 11.5

Model B (15 units tested):

5.5, 5.8, 6.0, 6.1, 6.3, 6.4, 6.5, 6.6, 6.8, 6.9, 7.0, 7.2, 7.5, 7.8, 8.0

- Compute the IQR for Model A and identify if any outliers exist using the $1.5 \times \text{IQR}$ rule.
- Compute the IQR for Model B and identify if any outliers exist.
- Draw the box-and-whisker plots for the two datasets on the same x-axis.
- Compare and contrast the two datasets. Which model appears to have a more consistent battery life? Which model generally lasts longer?