Exploring the Ratio of Dumbbell Press to Flat Bench Press

**Many weightlifters wish to track the ratio between the weight they use for dumbbell press (using two, equal size dumbbells), compared to flat bench press, (using a bar and equal size plates on either side). Below is a dataset with observations from 18 weightlifters and their corresponding ratio:**

A screenshot of a calculator

Description automatically generated

**1. What is the average ratio between dumbbell press and flat bench press?**

**2. Find the values for the first and third quartiles of this data set and interpret what they mean.**

**3. Find the interquartile range (IQR) for the 18 weightlifters**

**4. Create a 95% confidence interval for the mean ratio between dumbbell press and flat bench press and interpret it.**

**5. Create a 99% confidence interval for the mean ratio between dumbbell press and flat bench press and interpret it.**

**A graph of a bar graph

Description automatically generated6. Based on the histogram, how many weightlifters had ratios above 0.7? How many weightlifters had ratios below?**

**7. Approximately what percentage of the weightlifters observed have a ratio of 0.7 or above?**

**8. The graph to the right shows a histogram of the data. Based on the graph, what could be a concern and what is a possible solution.**

**9. What potential problems could arise from the way the data was collected?**