7.1 Summary Measures

Exercise 7.1

For the 50 individuals who tried Diet B, the average weight loss was 3.710 kg. The sample standard deviation (SD) of 2.769 kg indicates a higher variability in weight loss compared to Diet A, with most individuals losing between 0.941 kg (3.710 - 2.769) and 6.479 kg (3.710 + 2.769). This suggests that while Diet B was effective for some, its results were less consistent across individuals.

Exercise 7.2

The additional data for Diet B shows that the middle 50% of weight loss values fall between 1.953 kg and 5.485 kg, with an interquartile range (IQR) of 3.532 kg. This IQR indicates the spread of the middle half of the data and suggests that while there is variability in weight loss outcomes, half of the participants lost a significant amount of weight, between 1.953 kg and 5.485 kg. However, the effectiveness varies among individuals, as indicated by the IQR. While some participants lost a significant amount of weight, others lost less, suggesting that Diet B may work better for some than for others.

Comparing the results, Diet A has a higher mean weight loss (5.341 kg) than Diet B (3.710 kg), and a slightly smaller interquartile range (IQR), suggesting more consistent results among participants. While both diets were effective, Diet A appears to have been more effective on average and more consistent in its results across individuals.

Exercise 7.3

By considering sample sizes, we can see that in Area 1 (n=70), a smaller proportion of individuals prefer Brands A and B compared to Area 2 (n=90), where these brands have a higher combined preference. The ‘Other’ category is dominant in Area 1, suggesting a wider variety of brand preferences, while in Area 2, Brands A and B have a stronger hold, indicating a more concentrated preference for these brands among a larger sample of individuals.