Problem 1: The textbook recommends that we plot our data before deciding whether or not to do a \( t \) test. Give one example of a plot feature that might make us worry that our data does not meet the assumptions needed for doing a \( t \) test.

Problem 2: The magazine *Consumer Reports* tested 14 brands of vanilla yogurt. The average number of calories per serving for the 14 brands was 157.9, and the standard deviation was 44.8. Create and interpret a 95% confidence interval for the mean number of calories per serving for vanilla yogurt.

Problem 3: A manufacturer claims that a new type of portable phone has a mean range of 150 feet, but some customers feel that the true range is shorter. An independent laboratory tested a random sample of 44 phones, finding that the average range was 142 feet, while the standard deviation was 12 feet. Does this cast doubt on the manufacturer’s claim? Test an appropriate hypothesis at the 0.05 level and state your conclusion.