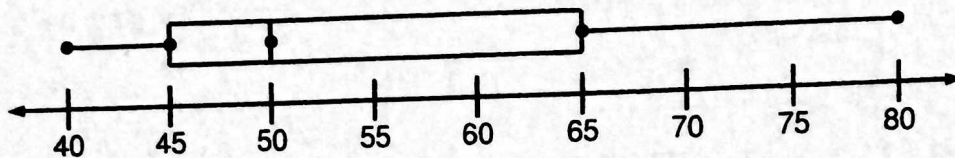


## Reading Box-and-Whisker Plots

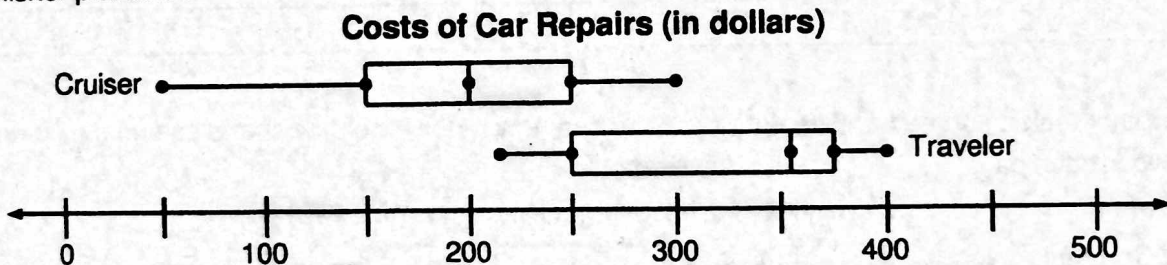
Answer the following on a separate sheet of paper.

1. The box-and-whisker plot below was formed using the given data set.



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 40 | 42 | 42 | 44 | 46 | 48 | 48 | 48 | 52 | 52 | 60 | 60 | 70 | 70 | 71 | 80 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

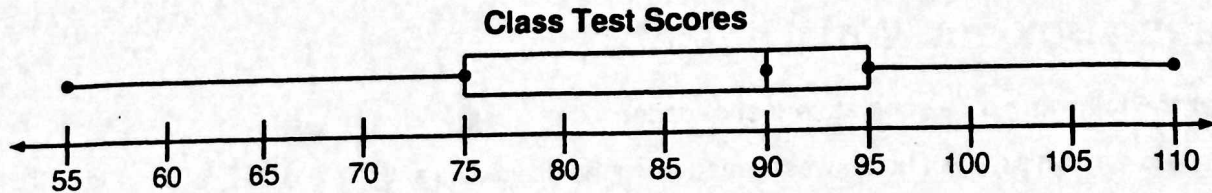
- What percent of the data is greater than the median?
  - What percent of the data is greater than the upper quartile?
  - What percent of the data is greater than the lower quartile?
  - Notice on the box-and-whisker plot that the whisker from 40 to 45 is a lot shorter than the whisker from 65 to 80. Explain what that tells you about the data.
2. Data was collected on the cost of repairing two makes of cars. The data was put in the box-and-whisker plot below.



- About how much is the lowest repair cost for a Cruiser? The highest?
- About how much is the lowest repair cost for a Traveler? The highest?
- Which make of car has a greater range of repair costs? Show or explain how you know.
- About how much is the median repair cost for a Cruiser? For a Traveler?
- About what percent of all Cruiser repair costs were more than \$250? Explain how you know.
- About what percent of all Traveler repair costs were between \$250 and \$360?
- About what percent of all Traveler repair costs were between \$360 and \$375?
- A report says that more than half the repairs of a Traveler cost more than any repair done on a Cruiser. Do the box-and-whisker plots support the report? Explain.
- Peggy's car is a Cruiser. The cost of repairing her car is about \$165. She thinks this is pretty expensive for a Cruiser. Is she right? Explain using the box-and-whisker plot.

NAME: \_\_\_\_\_

3.



a. Answer the following questions based on the box-and-whisker plot. If it is not possible to answer the question, explain why.

- i. What is the range of the data set?
- ii. What is the mean of the data set?
- iii. How many data values are represented by the box-and-whisker plot?
- iv. How many data values are exactly 55?
- v. Are any of the data values exactly 90?

b. Is it possible that the data set below was used to create the box-and-whisker plot? Explain.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 55 | 60 | 66 | 66 | 75 | 76 | 80 | 90 | 90 | 92 | 92 | 95 | 95 | 98 | 99 | 100 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

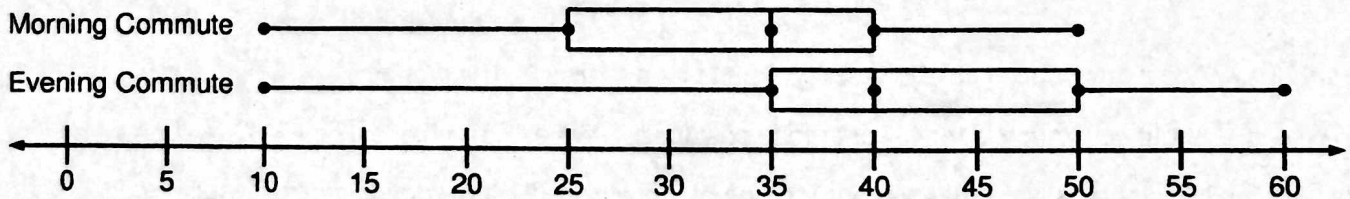
c. Create a data set that could match the box-and-whisker plot using 17 items of data.

4. Students in a class kept track of the time they spent on their homework last night. Make a box-and-whisker plot with the data. Do not forget to title your graph!

|   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | 15 | 15 | 15 | 15 | 25 | 25 | 30 | 30 | 30 | 30 | 35 | 35 | 45 | 45 | 90 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

5. A company took a survey of all its employees to see how much time they spend commuting to and from work each day.

**Employee Commuting Times (in minutes)**



- a. What is the shortest evening commute time?
- b. What is the longest morning commute time?
- c. About what percent of the evening commuting times fell between 10 and 35 minutes?
- d. About what percent of the morning commuting times fell between 10 and 35 minutes?
- e. Billy Bob's evening commute time is 52 minutes. He thinks this is longer than most people's evening commute times. Is he right? Explain.
- f. The data set shown below matches one of the box-and-whisker plots. Which one? Explain how you know.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 10 | 10 | 25 | 25 | 35 | 35 | 35 | 35 | 40 | 40 | 40 | 40 | 40 | 40 | 50 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|