



A random sample of 64 people were selected to take the Stanford-Binet Intelligence Test. After each person completed the test, they were assigned an intelligence quotient (IQ) based on their performance on the test. The resulting 64 IQs are as follows:

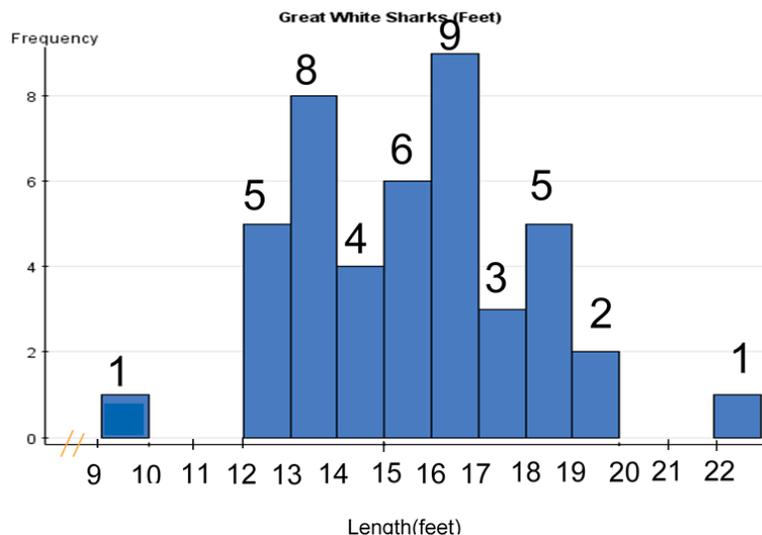
Stem-and-leaf of IQ N = 64
 Leaf Unit = 1.0

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1     6 8
1     7
3     7 58
4     8 3
12    8 55566778
23    9 01111333444
32    9 667889999
32    10 0112244
25    10 5556667777789
12    11 0014
8     11 667
5     12 23
3     12 8
2     13
2     13 6
1     14 1
    
```

1. Which is the minimum? *68*
2. Which is the maximum? *141*
3. Which is the median? *99.5*
4. Which is the range? *73* Which property of the distribution does the range describe? *Spread*
5. Which numerical summary is a good measure of center of the distribution? Explain why. *The median as the distribution is somewhat skewed to the right.*

Below is a histogram of the lengths, in feet, of 44 Great White Sharks.
 (Use this information to answer the following two problems).





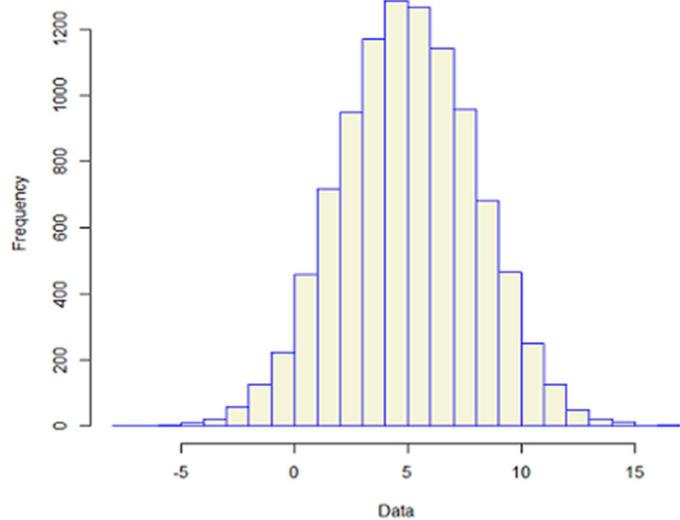
6. What proportion of sharks were between 15 and 20 feet? (n=44)

25/44.

7. Which is the exact value of \bar{x} ? *It cannot be estimated as we don't have the values of the 44 observations.*

8. Which numerical summary is a good measure of center for the following distribution?

- a) Median
- b) Mean
- c) Mode
- d) Both median and mean
- e) Median, mean and mode



9. What is a reasonable action if an outlier is a legitimate data value and represents natural variability for the group and variable measured?

The value should not be discarded; in fact, it may be one of the more interesting values in the data set.

10. List statistics that give information only about the location of a dataset.

Mean, median and mode

11. List statistics that give information only about the spread of a dataset.

IQR, standard deviation and range.



In a survey, students are asked how many hours they study in a typical week. A five-number summary of the responses is: 2, 9, 14, 20, 60.

(Use this information to answer the following two problems).

12. Which of the following is the best estimate for the mean number of hours spent studying in a typical week of the students sampled?

- a) 4
- b) 13.1
- c) 14
- d) 20
- e) 60

13. Fill in the blank in the following sentence. About 75% of the students spent at least _____ hours studying in a typical week.

- a) 9
- b) 14
- c) 20
- d) 45
- e) 60

14. Which measure of center is not resistant to an outlier in the data?

Mean and mode

15. Based on the relative frequency histograms below, which of the following is the best estimate for the median number of Duke basketball games attended for students who were a Duke fan before becoming students here¹?

- a) 0
- b) 7.5
- c) 12.5
- d) 17
- e) 71

