

STAT 110 – Fall 2009 – Section 4 – Practice Exam 2

Answer each of the twenty-five questions below on the scantron sheet using a number two-pencil. Be sure to bubble in your STAT110 ID (as passed around) and mark which form you are using. You may use a non-programmable calculator.

1) The Duke Talent Search uses the SAT to screen middle-school students for its program. A reviewer of the program doesn't like this because they think the scores of each student tend to differ a great deal when that same student takes two different forms of the SAT. This reviewer is criticizing what part of using the SAT for this program?

- a) The Confidence Level
- b) The Margin of Error
- c) The Reliability
- d) The Validity

2) The Duke Talent Search uses the SAT to screen middle-school students for its program. A reviewer of the program doesn't like this because the SAT is designed to measure how academically qualified students are after they have finished high school, and not how ready they are for a middle school program. This reviewer is criticizing what part of using the SAT for this program?

- a) The Confidence Level
- b) The Margin of Error
- c) The Reliability
- d) The Validity

3) One way of looking at measurement is to say that:

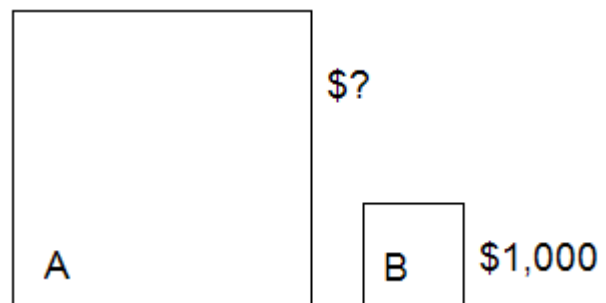
$$\text{measured value} = \text{true value} + \text{bias} + \text{random error}$$

Having a lot of bias would indicate that the measurement was:

- a) Not Reliable
- b) Not Valid
- c) Reliable
- d) Valid

4) In the pictogram to the right, box B is 1 tall and 1 wide. Box A is 5 tall and 5 wide. If box B represents \$1,000, how much does box A stand for?

- a) \$1,000
- b) \$5,000
- c) \$10,000
- d) \$25,000
- e) \$50,000

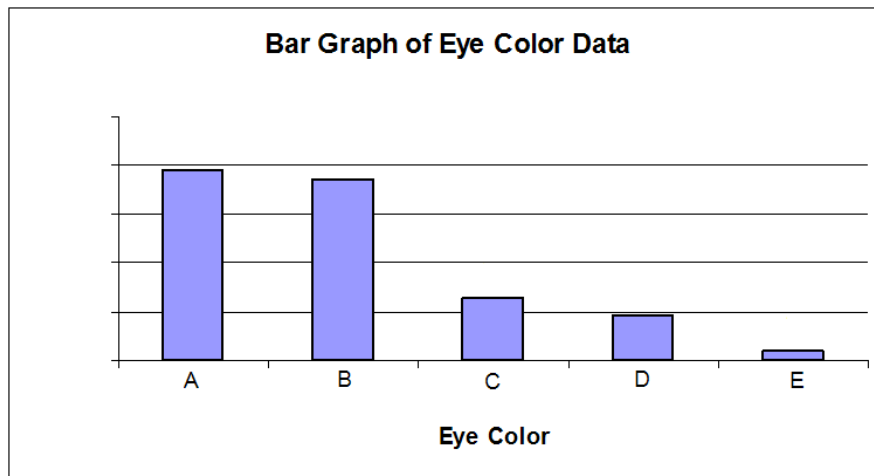


Questions 5-7 use the following distribution of eye color of 46 students in a STAT 110 class.

Column A	Column B	Column C
Blue	17	37%
Brown	18	39%
Green	6	13%
Hazel	4	9%
Other	1	2%
Total	46	100%

5) Column B is the:

- a) Confidence level
- b) Frequency
- c) Relative Frequency
- d) Variable



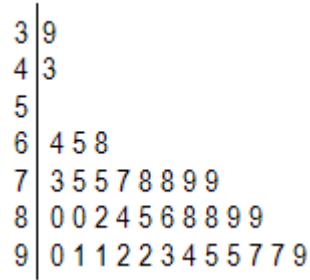
6) Bar D in the bar graph above corresponds to:

- a) Blue
- b) Brown
- c) Green
- d) Hazel
- e) Other

7) We had to make a bar graph of this data set instead of a histogram because:

- a) It is categorical and not quantitative
- b) The counts in column B are too small
- c) The percentages in column C are too small
- d) The standard deviation is too large
- e) There are too few categories

Questions 8 and 9 use the stem plot to the right of the distribution of test scores from an English class.



8) The smallest observation in the stem plot is:

- a) 9
- b) 39
- c) 90
- d) 93
- e) 99

9) The distribution of test scores is:

- a) Bimodal
- b) Skewed Left
- c) Skewed Right
- d) Symmetric

10) Without doing any calculations, we can tell that the mean of these test scores is:

- a) Smaller than the median
- b) Equal to the median
- c) Larger than the median
- d) It is impossible to tell without doing the calculation

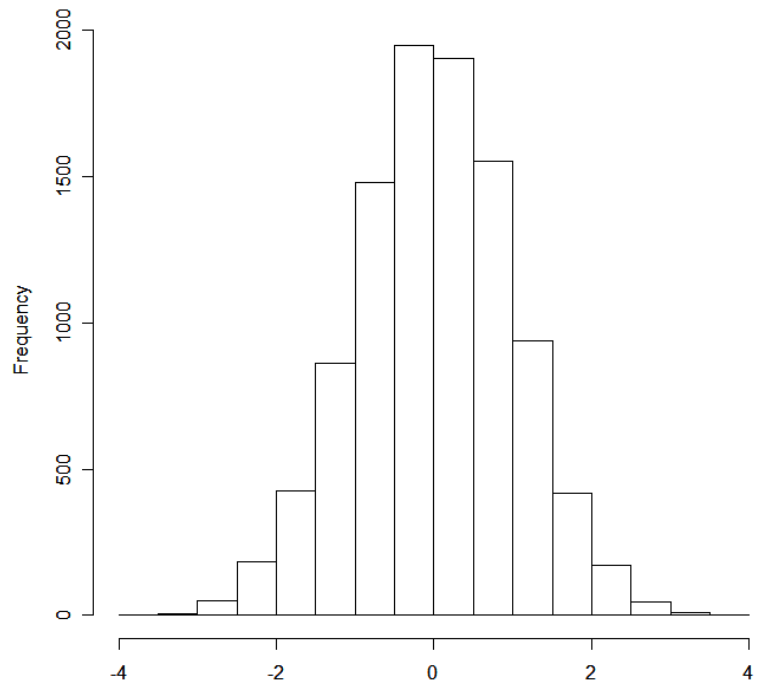
Questions 11 through 13 refer to the histogram shown to the right:

11) This data set is:

- a) Bimodal
- b) Skewed Left
- c) Skewed Right
- d) Symmetric

12) The median of this data set is:

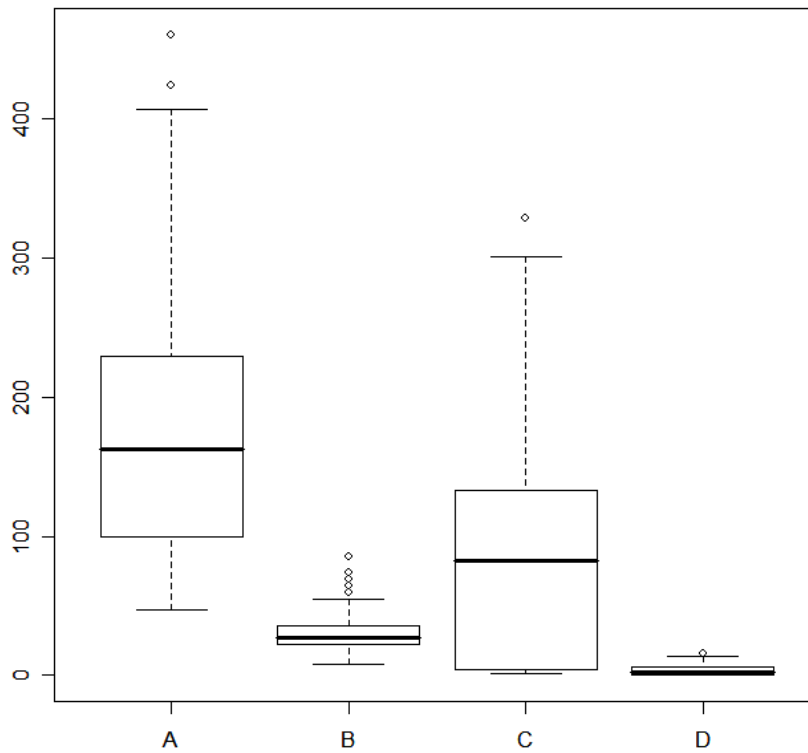
- a) Approximately equal to the mean
- b) Much greater than the mean
- c) Much less than the mean
- d) Can't tell from the picture



13) This center and spread of this data set would be best summarized by:

- a) A data table
- b) The five number summary
- c) The mean and standard deviation
- d) The median and standard deviation

Questions 14-16 use the side-by-side boxplots shown below:



14) Which of the variables has the largest median?

- a) A
- b) B
- c) C
- d) D
- e) Can't tell from the picture

15) The inter-quartile range of variable A is approximately:

- a) 65
- b) 130
- c) 225
- d) 350
- e) 400

16) Variable C:

- a) Has no outliers
- b) Is skewed left
- c) Is skewed right
- d) Is symmetric

Questions 17-20 are based on the data set: 6 4 5 1 3 11

17) The mean is:

- a) 3.0
- b) 3.5
- c) 4.0
- d) 4.5
- e) 5.0

18) The median is:

- a) 3.0
- b) 3.5
- c) 4.0
- d) 4.5
- e) 5.0

19) The third quartile (Q_3) is:

- a) 4.0
- b) 4.5
- c) 5.5
- d) 6.0
- e) 8.5

20) If the 11 in the data set was replaced by a 110, then

- a) The standard deviation would get larger
- b) The standard deviation would get smaller
- c) The standard deviation would stay the same
- d) Can't tell from the information given

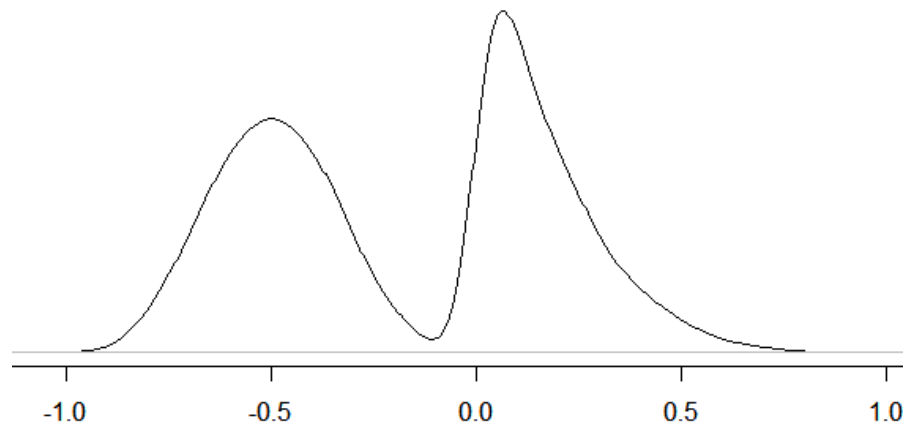
Questions 21 and 22 refer to the density curve to the right:

21) The density curve is:

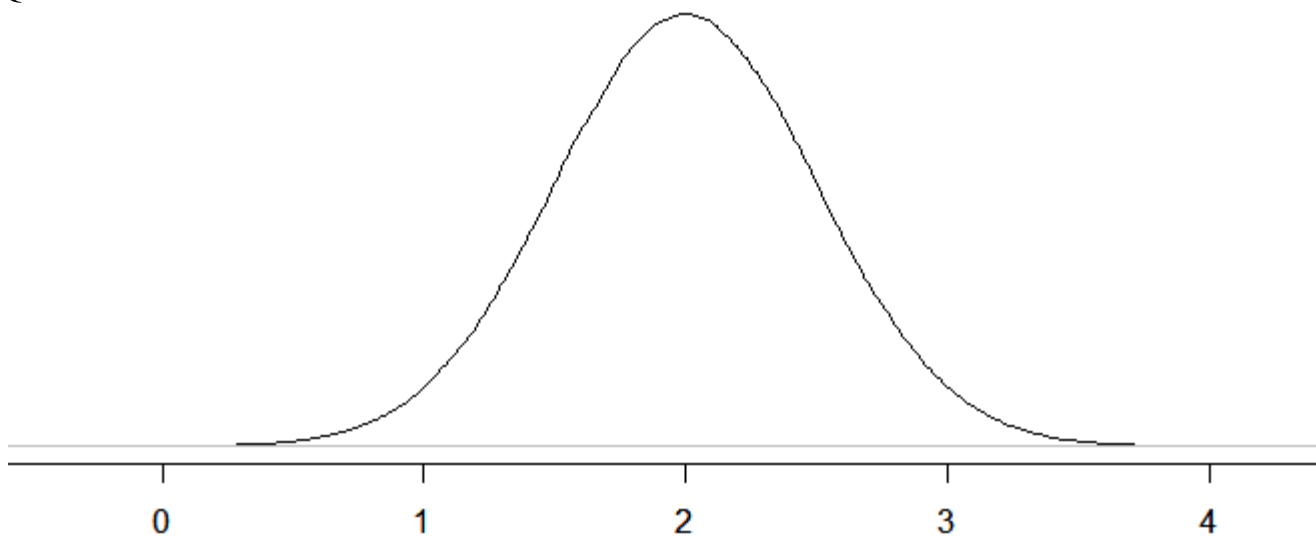
- a) Bimodal
- b) Skewed Left
- c) Skewed Right
- d) Symmetric

22) The total area under the density curve is closest to:

- a) -0.1
- b) 0.5
- c) 1
- d) 1.7



Questions 23 and 24 refer to the normal curve shown below:



23) The mean of this normal distribution is closest to:

- a) 0
- b) 1.5
- c) 2
- d) 2.5
- e) 4

24) The standard deviation of this normal distribution is closest to:

- a) 0.5
- b) 1
- c) 1.5
- d) 2
- e) 2.5

25) IQ scores are approximately normally distributed with mean 100 and standard deviation of 16. The middle 68% of IQ scores are between

- a) 68 and 100
- b) 68 and 132
- c) 84 and 100
- d) 84 and 116
- e) 84 and 132