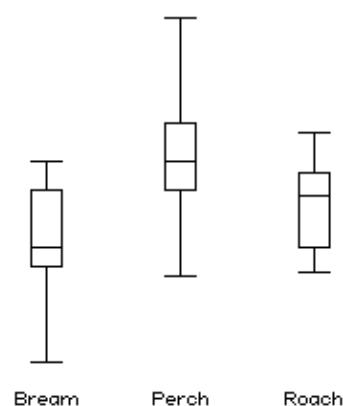


Chapter 1 Review

Name _____ Per _____

Part I - Multiple Choice

1. Ms. Myers' precalculus class had a standard deviation of 2.4 on a trigonometry test, while Ms. Gentry's precalculus had a standard deviation of 1.2 on the same test. What can be said about these two classes?
- (a) Ms. Myers' class is more homogeneous than Ms. Gentry's class.
 - (b) Ms. Gentry's class is more homogeneous than Ms. Myers' class.
 - (c) Ms. Gentry's class did less well on the test than Ms. Myers' class.
 - (d) Ms. Myers' class performed twice as well on the test as Ms. Gentry's class.
 - (e) Ms. Myers' class performed 1.2 points better on the test as Ms. Gentry's class.
2. The following is the DataDesk statistical summary of the gold medal performance in the men's long jump (measured in inches) for the modern Olympic series starting in 1900. Approximately what percent of the data lie between 298 and 334.64?
- | Summary of long jump
No Selector | |
|-------------------------------------|---------|
| Percentile | 25 |
| Count | 22 |
| Mean | 314.096 |
| Median | 312.781 |
| StdDev | 28.7055 |
| Min | 281.5 |
| Max | 350.5 |
| Lower ith %tile | 298 |
| Upper ith %tile | 334.64 |
3. In a frequency distribution of 3000 scores, the mean is 78 and the median as 95. One would expect this distribution to be:
- (a) skewed to the right
 - (b) skewed to the left
 - (c) symmetrical and mound-shaped
 - (d) symmetrical and uniform
 - (e) bimodal
4. A study was conducted on the weights of three different species of fish found in a lake in Finland. These three fish (bream, perch and roach) are commercial fish. Their weights are displayed in the boxplots to the right. Which of the following statements comparing these boxplots is **NOT** correct?
- (a) The median weights of the three species differ.
 - (b) The spread of roach is less than the spread of the other two species.
 - (c) The distributions of weights are approximately symmetric for all three species.
 - (d) There are no outliers in weight for the three species.
 - (e) The variability in the weights for the three species exceeds the variation in the three species' means.



5. The mean age of 12 of the members attending a mathematics department faculty meeting is 37. Mr. Myers, who is 50, arrives late. What is the average of all 13 members?

- (a) 37
- (b) 38
- (c) 39
- (d) 40
- (e) 41

6. Which of the following are true statements?

- I. The standard deviation is the square root of the variance.
- II. The standard deviation is zero only when all values are the same.
- III. The standard deviation is strongly affected by outliers.

- (a) I and II
- (b) I and III
- (c) II and III
- (d) I, II, and III
- (e) None of the above gives the complete set of true responses.

7. The stemplot displays the 1988 per capita income (in hundreds of dollars) of the 50 states. Which of the following best describes the data?

- (a) Skewed distribution, mean greater than median
- (b) Skewed distribution, median greater than mean
- (c) Symmetric distribution, mean greater than median
- (d) Symmetric distribution, median greater than mean
- (e) Symmetric distribution with outliers on high end



8. In order to rate TV shows, phone surveys are sometimes used. Such a survey might record several variables, some of which are listed below. Which of these variables are categorical?

- I. The type of show being watched
- II. The number of persons watching the show
- III. The ages of persons watching the show
- IV. The name of the show being watched
- V. The number of times the show has been watched in the last month

- (a) II, III, and V
- (b) I only
- (c) I and V
- (d) I and IV
- (e) None of the above describes the complete set of correct responses

2001 Exam – Question 1

The summary statistics for the number of inches of rainfall in Los Angeles for 117 years, beginning in 1877, are shown below.

N	MEAN	MEDIAN	TRMEAN	STDEV	SE MEAN
117	14.941	13.070	14.416	6.747	0.624
MIN	MAX	Q1	Q3		
4.850	38.180	9.680	19.250		

- (a) Describe a procedure that uses these summary statistics to determine whether there are outliers.

- (b) Are there outliers in these data? _____

Justify your answer based on the procedure that you described in part (a).

- (c) The news media reported that in a particular year, there were only 10 inches of rainfall. Use the information provided to comment on this reported statement.

2005 Exam B – Question 1

The graph below displays the scores of 32 students on a recent exam. Scores on this exam ranged from 64 to 95 points.

6	* *
6	* *
7	* * *
7	* * * *
8	* * * *
8	* * * * *
9	* * * * *
9	* * * *

- (a) Describe the shape of this distribution.
- (b) In order to motivate her students, the instructor of the class wants to report that, overall, the class's performance on the exam was high. Which summary statistic, the mean or the median, should the instructor use to report that overall exam performance was high? Explain.
- (c) The midrange is defined as $(\text{maximum} + \text{minimum})/2$. Compute this value using the data on the preceding table. Is the midrange considered a measure of center or a measure of spread? Explain.

2006 Exam B – Question 1

A large regional real estate company keeps records of home sales for each of its sales agents. Each month, the company publishes the sales volume for each agent. Monthly sales volume is defined as the total sales price of all homes sold by the agent during a month. The figure below displays the cumulative relative frequency plot of the most recent monthly sales volume (in hundreds of thousands of dollars) for these agents.



- (a) In the context of this question, explain what information is conveyed by the circled point.
- (b) What proportion of sales agents achieved monthly sales volumes between \$700,000 and \$800,000 ?
- (c) For values between 10 and 11 on the horizontal axis, the cumulative relative frequency plot is flat. In the context of this question, explain what this means.
- (d) A bonus is to be given to 20 percent of the sales agents. Those who achieved the highest monthly sales volume during the preceding month will receive a bonus. What is the minimum monthly sales volume an agent must have achieved to qualify for the bonus?

2007 Exam B – Question 1

1. The Better Business Council of a large city has concluded that students in the city's schools are not learning enough about economics to function in the modern world. These findings were based on test results from a random sample of 20 twelfth-grade students who completed a 46-question multiple-choice test on basic economic concepts. The data set below shows the number of questions that each of the 20 students in the sample answered correctly.

12, 16, 18, 17, 18, 33, 41, 44, 38, 35, 19, 36, 19, 13, 43, 8, 16, 14, 10, 9

- (a) Display these data in a stemplot.
- (b) Use your stemplot from part (a) to describe the main features of this score distribution.
- (c) Why would it be misleading to report only a measure of center for this score distribution?