

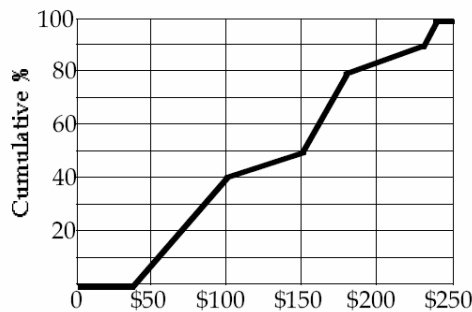
**SECTION I**  
**Multiple Choice**  
Number of Questions – 7

**Directions:** Solve each of the following problems, using the available space (or extra paper) for scratchwork. Decide which is the best of the choices given and circle that letter. No credit will be given for anything written on these pages for this part of the test. Do not spend too much time on any one problem.

1. The SPCA has kept these data records for the past 20 years. If they want to show the trend in the number of dogs they have housed, what kind of plot should they make?
- A. boxplot
  - B. timeplot
  - C. bar graph
  - D. pie chart
  - E. histogram

2. The veterinary bills for the dogs are summarized in the display shown. Estimate the IQR of these expenses.

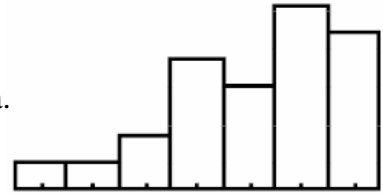
- A. \$50
- B. \$75
- C. \$100
- D. \$150
- E. \$200



3. Last weekend police ticketed 18 men whose mean speed was 72 miles per hour, and 30 women going an average of 64 mph. Overall, what was the mean speed of all the people ticketed?
- A. 67 mph
  - B. 68 mph
  - C. 69 mph
  - D. none of these
  - E. It cannot be determined.

4. Which is true of the data shown in this histogram?

- I.** The distribution is skewed to the right.
- II.** The mean is probably smaller than the median.
- III.** We should use the median and IQR to summarize these data.



- A.** I only
- B.** II only
- C.** III only
- D.** II and III only
- E.** I, II, and III

5. If we want to discuss any gaps and clusters in a data set, which of the following should not be chosen to display the data set?

- A.** histogram
- B.** stem-and-leaf plot
- C.** boxplot
- D.** dotplot
- E.** any of these would work

6. Which of the following is likely to have a mean that is smaller than the median?

- A.** The salaries of all National Football League players.
- B.** The scores of students (out of 100 points) on a very easy exam in which most get nearly-perfect scores but a few do very poorly.
- C.** The prices of homes in a large city.
- D.** The scores of students (out of 100 points) on a very difficult exam in which most get poor scores but a few do very well.
- E.** Amounts awarded by civil court juries.

7. The Five-Number Summary for scores on a statistics exam is 11, 35, 61, 70, 79. In all, 380 students took the test. About how many had scores between 35 and 61?

- A.** 26
- B.** 76
- C.** 95
- D.** 190
- E.** none of these

**SECTION II**  
**Part A**  
**Free Response**  
Questions 8-9

**Directions:** Show all of your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy of your results and explanations.

***Cordless Phones.***

In their October 2003 issue, *Consumer Reports* evaluated the price and performance of 23 models of cordless phones. Computer output gives these summaries for the prices:

Min	Q1	Median	Q3	Max	MidRange	Mean	TrMean	SD
15	30	50	110	200	107.5	71.75	67.63	52.08

8. Were any of these prices outliers? Explain how you made your decision.

9. One of the manufacturers advertises a cordless phone “economy-priced at only \$31.95.” Would you consider that to be a very low price? Explain.

## SECTION II

### Part B

### Investigative Task

#### Question 10

**Directions:** Show all of your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy of your results and explanations.

#### *Network Ratings.*

The following table gives the Nielsen ratings for the top 50 prime-time television shows for the first half of the 1994-95 viewing season. Each ratings point represents 954,000 households.

Show	Network	Rating	Show	Network	Rating
Home Improvement	ABC	20.8	ABC Sunday Movie	ABC	12.8
Grace Under Fire	ABC	20.0	Wings	NBC	12.6
Seinfeld	NBC	19.7	NBC Sunday Movie	NBC	12.0
E.R.	NBC	18.5	Step by Step	ABC	11.7
NYPD Blue	ABC	18.1	Beverly Hills, 90210	FOX	11.6
60 Minutes	CBS	17.9	Walker, Texas Ranger	CBS	11.6
Monday Night Football	ABC	17.4	Dr. Quinn, Med. Woman	CBS	11.5
Roseanne	ABC	17.3	Family Matters	ABC	11.5
Murder, She Wrote	CBS	16.2	Dateline NBC Tuesday	NBC	11.5
Ellen	ABC	15.5	CBS Tuesday Movie	CBS	11.4
Frasier	NBC	15.0	Boy Meets World	ABC	11.4
Mad About You	NBC	14.8	John Larroquette Show	NBC	11.4
Murphy Brown	CBS	14.8	Hangin' with Mr. Cooper	ABC	11.3
CBS Sunday Movie	CBS	14.7	Turning Point	ABC	11.2
Madman of the People	NBC	14.6	Earth 2	NBC	10.9
NBC Monday Movie	NBC	14.1	Due South	CBS	10.9
Friends	NBC	13.9	Rescue 911	CBS	10.9
Dave's World	CBS	13.8	Chicago Hope	CBS	10.7
20/20	ABC	13.7	Fresh Prince of Bel-Air	NBC	10.6
Me and the Boys	ABC	13.5	Blossom	NBC	10.6
Full House	ABC	13.0	All-American Girl	ABC	10.5
Law and Order	NBC	12.9	Diagnosis Murder	CBS	10.5
Love and War	CBS	12.8	The Cosby Mysteries	NBC	10.5
Northern Exposure	CBS	12.8	Picket Fences	CBS	10.3
The Nanny	CBS	12.8	SeaQuest DSV	NBC	10.2

10. **a.** Make an appropriate triple-display of the shows by network. Use graph paper.
- b.** How does ABC compare with NBC in the race for high ratings? Give appropriate graphical and numerical evidence to support your answer.