

AP Statistics
Unit 1 Test Review

Name _____
Date _____ Blk _____

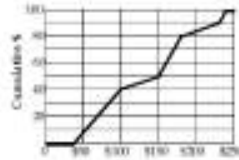
- ___ 1. School administrators collect data on students attending the school. Which of the following variables is quantitative?
 A) class (fresh., soph., junior, senior)
 B) grade point average
 C) if the student is in AP classes
 D) if the student has taken the SAT
 E) none of these

- ___ 2. Which of the following variables would most likely follow a Normal model?
 A) family income
 B) heights of singers in a co-ed choir
 C) weights of adult male elephants
 D) scores on an easy test
 E) all of these

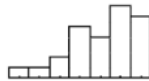
- ___ 3. The mean score on a chapter test in Algebra I was 78% and a median of 77.5%. The teacher accidentally recorded one student's score as 85, but it should have been 90. If the teacher corrects the score, then
 A) the mean will remain the same, but the median will increase.
 B) the mean and median will remain the same.
 C) the median will remain the same, but the mean will increase.
 D) the mean and median will both increase.
 E) We do not know how the mean and median are affected without further calculations, but the variance will increase.

- ___ 4. The weights of baby pythons are approximately normally distributed with a mean of 31.8 grams and a st. deviation of 2.39 grams. The percentage of baby pythons between 25 grams and 33 grams is about:
 A) 69% B) 22% C) 31% D) 41% E) 50%

- ___ 5. The veterinary bills for the dogs are summarized in the ogive (cumulative graph) shown. Estimate the IQR of these expenses.
 A) \$50 B) \$75 C) \$100 D) \$150 E) \$200



- ___ 6. 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 those E) It cannot be determined.



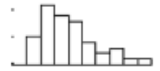
- ___ 7. Which is true of the data shown in the histogram to the right?
 I. The distribution is skewed to the right.
 II. The mean is probably smaller than the median.
 III. We should use median and IQR to summarize these data.
 A) I only B) II only C) III only D) II and III only E) I, II, and III

- ___ 8. We collect these data from 50 male students. Which variable is categorical?
 A) eye color B) head circumference C) hours of homework last week
 D) number of cigarettes smoked daily E) number of TV sets at home

- ___ 9. Which of those variables in #8 is most likely to be bimodal?

- ___ 10. Which of those variables in #8 is most likely to follow a Normal model?

- ___ 11. Which is true of the data whose distribution is shown?
 I. The distribution is skewed to the right.
 II. The mean is probably smaller than the median.
 III. We should summarize with mean and standard deviation.
 A) I only B) II only C) I and II D) II and III E) I, II, and III



- ___ 12. The mean number of hours worked for the 30 males was 6, and for the 20 females was 9. The overall mean number of hours worked ...
 A) is 6.5 B) is 7.2 C) is 7.5 D) is none of these. E) cannot be determined.

- ___ 13. George has an average bowling score of 180 and bowls in a league where the average for all bowlers is 150 and the standard deviation is 20. Bill has an average bowling score of 190 and bowls in a league where the average is 160 and the standard deviation is 15. Who ranks higher in his own league, George or Bill?
 A) Bill, because his 190 is higher than George's 180.
 B) Bill, because his standardized score is higher than George's.
 C) Bill & George have the same rank in their leagues, both are 30 pins above the mean.
 D) George, because his standardized score is higher than Bill's.
 E) George, because the standard deviation of bowling scores is higher in his league.

- ___ 14. If a distribution is skewed to the right with no outliers,
 A) mean < median B) mean ≈ median C) mean = median
 D) mean > median E) we can't tell without examining the data

- ___ 15. Suppose that a Normal model describes the acidity (pH) of rainwater, and that water tested after last week's storm had a z-score of 1.8. This means that the acidity of that rain ...
 A) had a pH of 1.8.
 B) varied with a standard deviation of 1.8
 C) had a pH 1.8 higher than average rainfall.
 D) had a pH 1.8 times that of average rainwater.
 E) had a pH 1.8 standard deviations higher than that of average rainwater.

- ___ 16. Jorge's score on Exam 1 in his statistics class was at the 64th percentile of the scores for all students. Which of the following statements is true?
 A) Jorge scored a 64% on the exam.
 B) Jorge scored better or the same as 64% of the students in the class.
 C) Jorge got 64 questions correctly.
 D) Jorge failed the exam.
 E) None of the above are true statements.

- ___ 17. Which of the following histograms pictured below has the largest standard deviation?



18. The average yearly snowfall in Chillyville is Normally distributed with a mean of 55 inches and a standard deviation of 4.83 inches. Illustrate with a picture and evaluate each of the following:

- a. $P(\text{snowfall} < 60)$
- b. $P(\text{snowfall} > 57)$
- c. $P(31 < \text{snowfall} < 57)$
- d. The value of x if $P(\text{snowfall} > x) = .423$

19. 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

- a. Were any of the prices outliers? Explain how you made your decision.
- b. 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.

20. Owners of an exercise gym believe that a Normal model is useful in projecting the number of clients who will exercise in their gym each week. They use a mean of 800 clients and a standard deviation of 90 clients.

- a. Draw and clearly label this model.
- b. What is the first quartile of the weekly number of clients?
- c. What is the IQR of the number of clients who will exercise in their gym each week.

21. At a school field day, 50 students and 50 faculty members each completed an obstacle course. Descriptive statistics for the competition times (in minutes) for the two groups are shown.

	Students	Faculty Members
Mean	9.90	12.09
Median	9.25	11.00
Minimum	3.75	4.50
Maximum	16.50	25.00
Lower Quartile	6.75	8.75
Upper Quartile	13.75	15.75

- A) Use the same scale to draw boxplots for the completion times for students and for faculty members.
- B) Write a few sentences comparing the variability of the two distributions.
- C) You have been asked to report on this event for the school newspaper. Write a few sentences describing student and faculty performances in this completion for the paper.

Textbook problems:

Do page 127 #41, 42, and page 131 #6, 8, 15, 16, 24 (abd), 25, 27, 29.