Erwin Segal NAME_____
Fall 2002

Section: W 8, W 12, W 4, F 3

Psy 207: Psychological Statistics

Exam 1 Form A

Circle in your **Name** and **Student Number** (at Identification Number; start at left and leave no spaces) on the Answer Sheet. Circle in the **1** for **Form 1** under "Grade or Education." Write your recitation time on the top of the Answer Sheet. **Also write your name and circle your recitation time** on this booklet. This booklet and the Answer sheet are to be turned in. There is one best answer per question. If you don't know the answer, it is better to guess than to leave it blank, as your grade is based on the total number correct.

**********Use for questions 1 to 11**********

The following are a set of quiz scores from a small class: 9, 3, 7, 6, 4, 4
(note that the questions are not necessarily in the best computational order)

1. ΣX = : A) 29; B) 18; C) 33; D) 47; E) 36
2. Mode = : A) 5; B) 4.5; C) 4; D) 2; E) 3
3. ΣX^2 = : A) 28.54; B) 333; C) 841; D) 136.2; E) 207
4. $(\Sigma X)^2$ = : A) 1089; B) 1296; C) 628; D) 86; E) 92
5. X_6 = : A) 3; B) 4; C) 5; D) 6; E) 4.5.
6. Median = : A) 5; B) 4.5; C) 6; D) 4; E) 6.5
7. SS = : A) 628; B) 56.58; C) 30.86; D) 25.5; E) 12.18
8. $\bar{X}$: A) 5.22; B) 4.96; C) 4.83; D) 5.50; E) 5.88
9. s^2 = : A) 5.44; B) 5.1; C) 6.38; D) 7.11; E) 1.56
10. s = : A) 1.58; B) 1.187; C) 2.67; D) 1.94; E) 2.26
11. η = : A) 3.58; B) 2.67; C) 1.77; D) 2.06; E) 4.20

**********Use the frequency distribution for questions 12 to 15**********

Scores	Frequency		
17-19	1		
14-16	0		
11-13	3		
8-10	4		
5- 7	2		

12. What are the real limits for the interval 11-13?
A) 11-13; B) 11.5-13.5; C) 10.5-13.5; D) 11.5-12.5; E) 10-14.

13. In a frequency polygon, what would be the value of the Y-axis (frequency) for the x-value of 15? A) 8; B) 9.5; C) 0; D) 2; E) 9.

14. In a cumulative frequency polygon, what would be the value of the Y-axis (frequency) for the x-value of 15?
A) 8; B) 9.5; C) 0; D) 2; E) 9.

15. What score is at the 60th percentile?
A) 9; B) 11; C) 12; D) 10.5; E) 8.

---

16. Consider this situation: You have received data in a frequency distribution, but there are some problems with it. Two different intervals in the distribution both contain 30 scores, but whoever tallied the data made a mistake. One of these intervals was 5-9, i.e., 5 units wide, and one was 20-29, i.e., 10 units wide. Although you cannot redo the tallies you wish to depict the data as accurately as possible on a histogram. If your rectangle over 5-9 is 30 units high, the rectangle over 20-29 be how many units high?
A) 10; B) 15; C) 20; D) 30; E) 60

17. Consider this list of ranges of family incomes and the percents of families that earn them.
i) \$0-\$24,999--20%; **ii**) \$25,000-\$34,999--25%; **iii**) \$35,000-\$54,999--25%; **iv**) \$55,000-\$79,999--20%; **v**) \$80,000-500,000--10%.If you drew a histogram-like figure from these data, for which range of incomes and percents should you show the greatest density?
A) **i**; B) **ii;** C) **iii**; D) **ii** and **iii** have equal density; E) **v**.

18. Which scales of measure allow for meaningful quantitative differences between measures? A) Only interval; B) Only interval and ordinal; C) All but nominal; D) Only ratio; E) Only ratio and interval.

19. If 20 students took a test and the lowest score was 18 and the highest was 44, you might eye-ball estimate the mean to be:
A) 51; B) 24; C) 31; D) 42; E) 12.

20. If 20 students took a test and the lowest score was 18 and the highest was 44, you might eye-ball estimate the standard deviation to be:
A) 6.4; B) 24; C) 10; D) 4; E) 15

**********Use for questions 21 to 26**********

Assume that a random sample of 2500 4th graders took a reading test and it was standardized with $\mu = 200$ and $\sigma = 25$.

21. If Margie scored 190 on the test, what was her z score?
A) 0.60; B) 1.20; C) -0.40; D) -1.60; E) 0.70.

22. If Heidi scored 245 on the test, what was her percentile rank?
A) 96.4; B) 77.2; C) 43.6; D) 60.0; E) 28.5

23. What is the probability that a 4th grader selected at random would have a score of 180 or greater? A) .892; B) .155; C) .542; D) .345; E) .788.

24. What score is equivalent to a z score of 2.5?
A) 65.2; B) 179.9; C) 238.5; D) 262.5; E) 294.3

25. What score is at the 90th percentile?
A) 184; B) 290; C) 122; D) 232; E) 220.

26. About how many people in the sample scored 250 or above?
A) 82; B) 57; C) 12; D) 133; E) 1460.

---

27. An exam was given in two rooms. 40 students took it in one room and 28 in the other. The mean in the first room was 70.2 and the mean in the second, 68.5. What was the overall mean for the exam?
A) 68.4; B) 70.2; C) 138.4; D) 69.35; E) 69.5.

Use for questions 28 to 31

Assign the most likely shapes of distribution from the following list to the following populations: A) positively skewed; D) normal; C) bimodal; D) rectangular; E) negatively skewed.

28. The distribution of scores on a fair statistics test in which half of the students studied and half did not.

29. The distribution of times (in seconds) that it takes the cars stopped at a red light to start going after it turns green..

30. The distribution of weights of pumpkins in a pumpkin field just before harvest.

31. When the Mean is smaller than the Median which is smaller than the Mode.

32. The distribution of a random sample of the digits 0-9 (n=1000) from a set containing an equal number of all digits. Each digit was replaced and rerandomized after it was tallied.

---

33. What is the probability of getting 4 heads in four flips of a fair coin?
A) .50; B) .75; C) .0625; D) .05; E) .25.

34. What is the probability of getting 4 heads in four flips of a fair coin if the first two flips have already turned up heads?
A) .50; B) .75; C) .0625; D) .05; E) .25.

Key: CCEAB ADDBE DCCED BBECA CAEDD BECAB EDCE