Statistics Mock Midterm 1

1. If you determine that the mean of the population is 50 and the standard deviation is 4, then you have just calculated:
    a) descriptive statistics
    b) inferential statistics
    c) variability statistics
    d) central tendency statistics

2. If you calculate the population mean, you have calculated a _____.
    a) measure of variability
    b) statistic
    c) parameter
    d) that's impossible. You will never have access to the entire population.

3. When I calculate a sample variance, how do I adjust to accurately estimate the population variance?
    a) take the square root of the variance
    b) square the result
    c) divide by n-1
    d) divide by N

4. Temperature (in degrees Celsius) is measured on what scale?
    a) Ordinal
    b) Ratio
    c) Nominal
    d) Interval

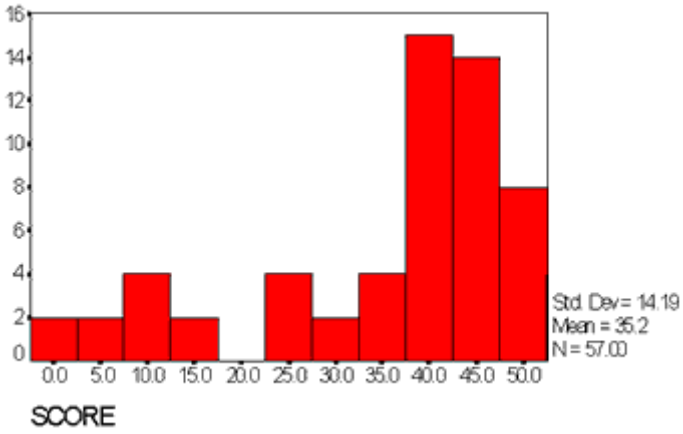
5. On a test of typing ability, I have four scores: 4, 3, 7, 2. For these numbers, $\sum X^2$ equals _____ and $(\sum X)^2$ equals _____.
    a) 16, 16
    b) 16, 78
    c) 16, 256
    d) 78, 256

6. Which of the following statements about frequency tables is true?
    a) Each possible value should be listed from highest to lowest
    b) The proportion is expressed as $p = f/N \times 100$
    c) $\sum f$ will be the same as $\sum x$
    d) all of these statements are true

7. If a researcher wants to display frequencies for a continous variable, which frequency distribution is best to use?

a) bar graph
b) histogram
c) polygon
d) either a or c
e) either b or c

8. This distribution can best be described as:



a) positively skewed
b) negatively skewed
c) floor effect
d) ceiling effect

9. Describe the kurtosis of the following distributions, respectively:

a) leptokurtic and mesokurtic
b) platykurtic and leptokurtic
c) mesokurtic and leptokurtic
d) platykurtic and mesokurtic

10. If your sample has a really extreme score, which is the WORST measure of central tendency to use?

a) mean
b) median
c) mode
d) none of the above is bad

11. If I test students on some ability, and everyone has similar scores, then this sample would have a _____ variance and a _____ standard deviation.

a) small; small
b) small; large
c) large; small
d) large; large

12. $s^2 = \frac{(X - M)^2}{n - 1}$ is a formula for:

a) sample variance
b) sample standard deviation
c) population variance
d) population standard deviation

***Note**: Questions 13, 14, 15, all use the same **sample** data set:*
10, 12, 17, 20, 21

13. What is the sum of squares?

a) SS is always 0
b) 94
c) 18.8
d) 23.5

14. What is the variance?

a) 0
b) 94
c) 18.8
d) 23.5

15. What is the standard deviation?

a) 18.8
b) 23.5
c) 4.33
d) 4.85

16. σ^2 refers to:

a) sample sum of squares
b) sample variance
c) sample standard deviation
d) population sum of squares
e) population variance
f) population standard deviation

17. Why do you adjust for the variance in a sample?
    a) because your sample variance is an unbiased estimate of the population variance
    b) because on average, sample variances tend to underestimate the population variance
    c) because on average, sample variances tend to overestimate the population variance
    d) because a sample has a different mean than a population

18. In a population of scores, the mean is 76 and the standard deviation is 5. If you scored an 83, what is your deviation score?
    a) 1.4
    b) –1.4
    c) 7
    d) -7

19. In a population of psychics, the mean psychic ability score is 22, with a standard deviation of 3. Your own personal psychic has a z score of –1.33. What is her raw score?
    a) 25.99
    b) 18.01
    c) 7
    d) 19
    e) 14.28

20. This is my sample of how much wood woodchucks could chuck: 2, 2, 3, 4, 4, 4, 5, 5, 6, 7. If I randomly picked one of these scores, what is the probability that I would pick a score above 4?
    a) 0.7
    b) 0.3
    c) 0.4
    d) 0.6

21. Approximately what percentage of scores is above a z score of –1?
    a) 2%
    b) 14%
    c) 34%
    d) 16%
    e) 84%
    f) 67%

22. What percentage of scores falls below a z score of 1.75?
    a) 45.99%
    b) 95.99%
    c) 4.01%
    d) 54.01%

23. What percentage of scores falls below a z score of –0.6?
    a) 72.57%
    b) -27.43%
    c) 57.43%
    d) 27.43%

24. What percentage of scores falls above a z score of –0.6?
    a) 72.57%
    b) 27.43%
    c) 57.43%
    d) 22.43%

25. What proportion of scores would be above the mean, but below of z score of 1.5?
    a) 43.32%
    b) .4332
    c) 6.68%
    d) .0668

26. I administer a test of musical ability. The mean score is 45, and the standard deviation is 7. What percentage of scores would be above a score of 37?
    a) 87.29%
    b) 12.71%
    c) 37.29%
    d) 62.71%
    e) There is not enough information to answer this question

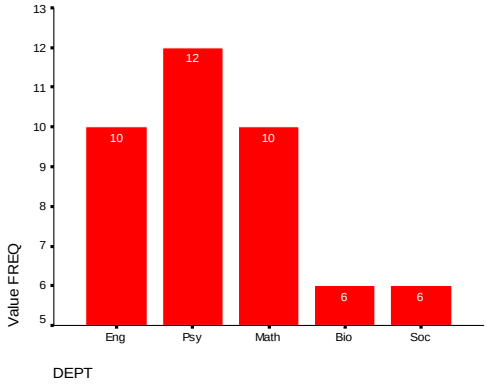
27. In a distribution of scores, a raw score of 22 corresponds to a z score of –1 and a raw score of 40 corresponds to a z score of 0.5. Find the mean and the standard deviation for the distribution.
    a) Mean is 31 and standard deviation is 12
    b) Mean is 31 and standard deviation is 9
    c) Mean is 34 and standard deviation is 12
    d) Mean is 34 and standard deviation is 9
    e) There is not enough information to answer this question

28. I have a score of 30. In which population would this be considered an extreme score?
    a) Mean is 40, standard deviation is 12
    b) Mean is 38, standard deviation is 5
    c) Mean is 22, standard deviation is 3
    d) Mean is 15, standard deviation is 10

29. If you scored 25 on a test, and the class average was 30, which standard deviation would give you the better score?

a) 2
b) 4
c) 6
d) 8

30. What is the mode for the following distribution based on number of graduates for each Department?



a) 12
b) 6
c) Bio and Soc
d) Psych