

Practice Test—z-score Unit

Multiple Choice

Identify the choice that best completes the statement or answers the question. (1.5 Pts each)

- _____ 1. If a Z score is 0 then the value of the corresponding raw score would be
- 0
 - the same as the mean of the empirical distribution
 - the same as the standard deviation of the empirical distribution
 - probably a negative number
- _____ 2. A defining characteristic of the normal curve is that it is
- theoretical
 - positively skewed
 - negatively skewed
 - perfectly skewed
- _____ 3. The area beyond ± 2 standard deviations contains approximately what % of the area under the normal curve?
- 75%
 - 50%
 - 9%
 - 5%
- _____ 4. The Z score table gives the area between a score and the mean. For a Z score of -1.00 that area (in percentages) is
- 34.13%
 - -34.13%
 - 68.26%
 - -68.26%
- _____ 5. Column C in the normal curve table lists "areas beyond Z". This is the area
- below a positive Z score
 - above a negative Z score
 - between two positive Z scores
 - above a positive Z score
- _____ 6. The area between the mean and a Z score of $+1.50$ is 43.32%. This score is less than _____ of the scores in the distribution.
- 43.32%
 - 6.68%
 - 3.32%
 - 93.32%
- _____ 7. The mean score on a final chemistry exam was 75, and the standard deviation of the scores was 5. If the distribution is normal and your score was 70, what percentage of the scores was lower than yours?
- 15.87%
 - 30.00%
 - 34.13%
 - 50.00%
- _____ 8. The probability that a randomly selected case will have a score beyond ± 1.00 standard deviation of the mean is
- .6826
 - .5000
 - .3174
 - 1/2 of the area of 1 standard deviation

- ___ 9. Statistics are to parameters as
- samples are to populations
 - populations are to samples
 - medians are to standard deviations
 - percentages are to proportions
- ___ 10. Social scientists use inferential statistics to generalize to populations after they have
- collected a representative sample
 - collected all the information possible from the entire population
 - collected an EPSEM sample from the population of interest
 - collected at least 100 cases from all possible populations
- ___ 13. The standard error of the mean is the same thing as
- the standard deviation of a sample
 - the standard deviation of a population
 - the standard deviation of a sampling distribution
 - the variance of a sample
- ___ 14. When we use larger samples ($N > 100$) we can assume a normal sampling distribution because of
- common sense
 - the Central Limit Theorem
 - what we know about the population
 - what we know about the sample
- ___ 16. Which sample size will produce the confidence interval with the smallest width?
- 100
 - 200
 - 500
 - 1000
- ___ 17. The central problem in the case of one sample hypothesis test is to determine
- if a sample is random
 - if sample statistics are the same as those of the sampling distribution
 - if parameters are representative of population
 - if a sample came from a population with a certain characteristic
- ___ 18. The null hypothesis in the one sample case is a statement of
- agreement with the research hypothesis
 - rejection
 - acceptance
 - no difference
- ___ 19. In tests of significance, if the test statistic falls in the critical region, we may conclude that
- the population distribution is normal
 - the null hypothesis can be rejected
 - the research hypothesis is true
 - our sample size was too small
- ___ 20. If the critical region begins at $Z(\text{critical}) = \pm 2.56$ and the test statistic is -2.50 , we
- fail to reject the null hypothesis
 - reject the null hypothesis
 - cannot make a decision because the test statistic is so close to the critical region
 - change the alpha level
- ___ 21. A sample of people attending a professional football game averages 13.7 years of formal education while the surrounding community averages 12.1. The difference is significant at the .05 level. What could we conclude?
- the null hypothesis should be accepted
 - the research hypothesis should be rejected
 - the sample is significantly more educated than the community as a whole
 - the alpha level is too low

- _____ 25. When random samples are drawn so that the selection of a case for one sample has no effect on the selection of cases for another sample, the samples are
- dependent
 - independent
 - simple
 - systematic
- _____ 26. When conducting hypothesis tests for two sample means, the term $\mu_1 - \mu_2$ in the numerator of the formula reduces to zero because
- the standard deviations are calculated first
 - the tests are conducted at very low alpha levels
 - the samples are independent as well as random
 - the null hypothesis is assumed to be true
- _____ 30. The larger the sample size, the
- more important the observed difference
 - more likely we are to reject the null hypothesis
 - less likely we are to reject the null hypothesis
 - lower the Z score
- _____ 31. Random samples of 1546 men and 1678 women have been given a scale that measures support of legal abortion. Men average 12.45 and women average 12.46 and the difference is significant at the 0.05 level. What can we conclude?
- There is an important difference between men and women on this issue.
 - Because of the large sample sizes, these results may be statistically significant but trivial.
 - The difference should be re-tested with a one-tailed test
 - The difference should be re-tested at a higher alpha level

Calculations

- 39) A scale measuring prejudice has been administered to a large sample of respondents. The distribution of scores is approximately normal, with a mean of 31 and a standard deviation of 5. What percentage of the sample had scores above 35?
- 40) A scale measuring prejudice has been administered to a sample of 100 respondents. The distribution of scores is from a population which is approximately normal, with a mean of 31 and a standard deviation of 5. What is the probability the sample will have a mean less than 30?
- 42) A researcher has gathered information from a random sample of 178 households. In the sample, there were an average of 2.1 television sets per household with a standard deviation of $s=1.0$. Give a 95% confidence interval for the number of television sets per household in the population.

Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1
2. ANS: A PTS: 1
3. ANS: D PTS: 1
4. ANS: A PTS: 1
5. ANS: D PTS: 1
6. ANS: B PTS: 1
7. ANS: A PTS: 1
8. ANS: C PTS: 1
9. ANS: A PTS: 1
10. ANS: C PTS: 1
11. ANS: A PTS: 1
12. ANS: B PTS: 1
13. ANS: C PTS: 1
14. ANS: B PTS: 1
15. ANS: B PTS: 1
16. ANS: D PTS: 1
17. ANS: D PTS: 1
18. ANS: D PTS: 1
19. ANS: B PTS: 1
20. ANS: A PTS: 1
21. ANS: C PTS: 1
22. ANS: A PTS: 1
23. ANS: C PTS: 1
24. ANS: A PTS: 1
25. ANS: B PTS: 1
26. ANS: D PTS: 1
27. ANS: A PTS: 1
28. ANS: D PTS: 1
29. ANS: B PTS: 1
30. ANS: B PTS: 1
31. ANS: B PTS: 1
32. ANS: A PTS: 1
33. ANS: B PTS: 1
34. ANS: C PTS: 1
35. ANS: A PTS: 1
36. ANS: B PTS: 1
37. ANS: C PTS: 1
38. ANS: D PTS: 1
39. 21.29%
40. 2.33%
41. 95% confident the mean number of television sets in an American household is between 1.95 and 2.25.