CHAPTER 8

FILL-IN-THE-BLANK ITEMS

Introduction

Because the normal distribution is useful in translating scores to probabilities, it is analogous to the (1) _________________ stone. Although the normal distribution is often attributed to German mathematician (2) _________________, it was actually introduced by (3) _________________. The normal distribution is important because many (4) _________________ distributions are similar to it. (5) _________________ distributions are those based on actual measurement. Also, the normal distribution is important for inferential statistics because it is the (6) _________________ case for a number of other important distributions. Examples of distributions that approach the normal distribution with large sample sizes are the chi-square distribution and the sampling distribution of (7) _________________.

Curves and Probability

All distributions of scores can be thought of as (8) _________________ distributions. The area under a portion of the curve represents the (9) _________________ associated with the scores falling in that area. Determining that probability usually involves two steps. First, we convert our raw scores to (10) _________________. Second, we use the *z* scores in conjunction with Table (11) _________________ in Appendix 2 to determine an (12) _________________ of the curve.

Characteristics of the Normal Curve

Each normal curve is (13) _________________; that is, the two halves coincide. Each normal curve has the same measures of (14) _________________ tendency, and the (15) _________________ of each curve never reach the baseline. The (16) _________________ normal curve has a mean of 0 and a standard deviation of 1. Almost the entire normal curve is bounded by (17) _________________ standard deviation units.

Review of *z Scores*

A (18) _________________ is the deviation of a raw score from the mean in standard deviation units. Negative *z* scores tell us that the raw score we are converting is (19) _________________ the mean, and positive values tell us that the raw score is (20) _________________ the mean.

Using the Normal Curve Table

In Table A, the percentage area between the mean and any *z* score is found in column (21) _________________. The remaining area beyond the *z* score is contained in column (22) _________________.

Finding Areas Under the Curve

Finding the percentile rank of a score

(23) _________________ _________________ is the percentage of cases up to and including the one in which we are interested. The first step in working any normal curve problem is to (24) _________________ the normal curve and label it with the information given in the problem. To find the percentile rank of a score, first convert the score to a (25) _________________. Then obtain the appropriate area from either column B or column C in Table A.

Finding the percentage of the normal curve above a score

After the normal curve is drawn and labeled appropriately, the (26) _________________ _________________ is converted to a *z* score. Then the appropriate area is obtained from Table (27) _________________. The *z* score itself is found in column (28) _________________.

Finding percentage frequency

When we find a percentage area under the normal curve, we can take that percentage of the total sample size to find (29) _________________ _________________ subjects have scores in the area.

Finding an area between two scores

To find an area between two scores, both scores must be converted to (30) _________________. Then either the areas from Table A are (31) _________________ or the smaller area is subtracted from the larger to find the area between the scores.

Probability and areas under the curve

The percentage areas under the curve can be converted into probabilities by dividing them by (32) _________________. The range of probability is from 0 to (33) _________________.

Finding Scores Cutting Off Areas

Finding the score that has a particular percentile rank

To locate a score associated with a particular area, first determine a (34) _________________ from Table A and then convert it to a raw score with Formula 6-19.

Finding deviant scores

When the problem asks for deviant or unlikely scores without specifying the direction of the deviance, you are really being asked to find scores at (35) _________________ ends of the distribution. The deviant percentage must first be divided in (36) _________________ before the graph can be correctly labeled.

Probability and deviant scores

If the problem of finding deviant scores is stated in terms of probability (e.g., find the scores that are so deviant that their probability is .05 or less), the first step is to convert the probability to (37) _________________ _________________. To do this, you multiply the probability by (38) _________________.

Troubleshooting Your Computations

As an aid to understanding and to determining whether your answer is appropriate, a small

(39) _________________ _________________ should always be drawn and labeled as completely as possible. Then the obtained answer should be compared to the curve to see if it appears

(40) _________________. A common error is to not have the answer in the correct final

(41) _________________.