**Q 1**

Question 1



True or False: If a sample size is large, then the shape of a histogram of the sample data will be approximately normal, regardless of the shape of the original population distribution.

**Q 2**

Question 2



Suppose the following statement is made in a statistical summary:  
  
A comparison of breathing capacities of individuals in households with low nitrogen dioxide levels and individuals in households with high nitrogen dioxide levels indicated that there is no difference in the means (two-sided p-value = 0.24).  
  
What is wrong with this statement?

Select one:

a. The researchers should have reported a one-sided p-value.

b. Since we find in favor of the null hypothesis that the difference in means is equal to 0, the statement is correct.

c. Finding in favor of the null hypothesis does not necessarily mean that that the difference in mean nitrogen dioxide levels between the two groups is 0, it means that the difference could plausibly be zero.

d. The researchers did not account for confounding variables in the study.

The data in Display 2.14 (page 53 in the text) are survival times (in days) of guinea pigs that were randomly assigned to a control group or to a treatment group that received a dose of tubercle bacilli. Which of the following models would be most appropriate for these data?

Select one:

a. The additive treatment effect model (see section 1.3.1 of the text for a refresher) using a normal approximation with equal variances as a test statistic.

b. Use an additive treatment effect model, but calculate a confidence interval instead of performing a hypothesis test.

c. The model would need to take into account a shift in mean as well as changes in variability between the treatment groups.

d. A permutation test must be used for these data because we do not know the shapes of the underlying populations of data.