A lab technician is tested for her consistency by taking multiple measurements of cholesterol levels from the same blood sample. The target accuracy is a variance in measurements of 1.2 or less. If the lab technician takes 16 measurements and the variance of the measurements in the sample is 2.2, does this provide enough evidence to reject the claim that the lab technician’s accuracy is within the target accuracy?

1. State the null and alternative hypotheses.

A. H0:  < 1.2, H1:  ≠ 1.2

B. H0:  ≤ 1.2, H1:  > 1.2

C. H0:  ≠ 1.2, H1:  = 1.2

D. H0:  ≥ 1.2, H1:  ≠ 1.2

2. Compute the value of the appropriate test statistic.

A. t = 27.50

B. z = 1.65

C. 2 = 27.50

D. 2 = 30.58

3. At the  = .01 level of significance, what is your conclusion?

A. Do not reject H0. At the  = .01 level of significance there is not sufficient evidence to suggest that this technician’s true variance is greater than the target accuracy.

B. Reject H0. At the  = .01 level of significance, there is enough evidence to support the claim that this technician’s variance is larger than the target accuracy.

C. Cannot determine

D. Reject H0. At the  = .01 level of significance, there is not enough evidence to support the claim that this technician’s true variance is larger than the target accuracy.