09 PARAMATIC AND NON-PARAMATIC

1. A test of independence based on contingency table data uses a(n):
   (A) chi-square statistic.
   (B) F-statistic.
   (C) t-statistic.

2. For a test of independence based on contingency table data, the test statistic is calculated as the:
   (A) mean absolute deviation of all table cells' actual values and their expected values, if the two characteristics are independent.
   (B) sum of differences between each table cell's actual value and its expected value, if the two characteristics are independent.
   (C) sum of squared differences between each table cell's actual value and its expected value, if the two characteristics are independent

3. Critical values from Student's t-distribution for a two-tailed test at a 5% significance level:

DF	
28	2.048
29	2.045
30	2.042

A researcher wants to test a hypothesis that two variables have a population correlation coefficient equal to zero. For a sample size of 30, the appropriate critical value for this test is plus-or-minus.
   (A) 2.048.
   (B) 2.045.
   (C) 2.042.

4. A test of the hypothesis that two categorical variables are independent is most likely to Employ:
   (A) population parameters.
   (B) t-statistics.
   (C) contingency tables.

5. In a test of independence based on contingency table data, degrees of freedom are the:
   (A) sum of the number of rows and the number of columns.
   (B) product of the number of rows minus one and the number of columns, minus one.
   (C) sum of the number of rows and the number of columns, minus two.

6. To test a hypothesis that the population correlation coefficient of two variables is equal to zero, an analyst collects a sample of 24 observations and calculates a sample correlation coefficient of 0.37. Can the analyst test this hypothesis using only these two inputs?
   (A) Yes.
   (B) No, because the sample standard deviations of the two variables are also required.
   (C) No, because the sample means of the two variables are also required.

7. A researcher wants to test whether the weekly returns on two stocks are correlated. The test statistic for the appropriate test follows a:
   (A) chi-square distribution.
   (B) t-distribution with n − 1 degrees of freedom.
   (C) t-distribution with n − 2 degrees of freedom.

8. Student's t-distribution, level of significance for a two-tailed test:

df	0.20	0.10	0.05	0.02	0.01	0.001
16	1.337	1.746	2.120	2.583	2.921	4.015
17	1.333	1.740	2.110	2.567	2.898	3.965
18	1.330	1.734	2.101	2.552	2.878	3.922
19	1.328	1.729	2.093	2.539	2.861	3.883
20	1.325	1.725	2.086	2.528	2.845	3.850

Based on a sample correlation coefficient of −0.525 from a sample size of 19, an analyst calculates a t-statistic of $\frac{-0.525\sqrt{19-2}}{\sqrt{1-(-0.525)^2}}$ =-2.5433. The analyst can reject the hypothesis that the population correlation coefficient equals zero:
   (A) at a 2% significance level, but not at a 1% significance level.
   (B) at a 1% significance level.
   (C) at a 5% significance level, but not at a 2% significance level.