

Homework #16
Due Wednesday, May 20
No late papers accepted! No excuses!

1. A radio station claims that the distribution of music preferences for listeners in the broadcast region is 4% prefer classical; 36% prefer country; 11% prefer gospel, 2% prefer oldies; 18% prefer pop and 29% prefer rock. A marketing executive randomly selects 500 radio music listeners from the broadcast region and asks whether he or she prefers classical, country, gospel, oldies, pop or rock music. The results are below. Using a 1% significance level, test the radio station's claim.

Type of Music Preferred	Frequency
Classical	8
Country	210
Gospel	72
Oldies	10
Pop	75
Rock	125

2. The results of a random sample of students by type of school and their attitudes on safety steps taken by the school staff are shown in the contingency table. At the 1% significance level, can you conclude that attitudes about the safety steps taken by the school staff are related to the type of school?

School staff has

Type of School	Taken all steps necessary For student safety	Taken some steps toward student safety
Public	40	51
Private	64	34

3. A study of methods for teaching reading in the third grade was conducted. One classroom of 21 students participated in directed reading activities for eight weeks. Another classroom of 23 students followed the same curriculum without the activities. Students in both classrooms then took the same reading test.

The following are the scores for the first (treated) classroom:

24	43	58	71	43	49	61	44	67	49	53
56	59	52	62	54	57	33	46	43	57	

The following are the scores for the second (control) classroom:

42	43	55	26	62	37	33	41	19	54	20
85	46	10	17	60	53	42	37	42	55	28
48										

Diagnostics suggest that the data are sampled from a normal population and the population variances are equal. Test the claim that third graders taught with the directed reading activities scored higher than those taught without the activities at a 5% significance level.

4. In a survey of 1150 adult males, 805 said they use the Internet. In a survey of 1050 females, 746 said they use the Internet. At the 5% significance level, can you reject the claim that the proportions of Internet users are the same for the two groups?