AP Statistics

Chi-Square test for independence.

1. A recent debate about where in the United States skiers believe the skiing is best prompted the following survey. Test to see if the best ski area is independent of the level of the skier.

| **U.S. Ski Area** | **Beginner** | **Intermediate** | **Advanced** |
| --- | --- | --- | --- |
| **Tahoe** | **20** | **30** | **40** |
| **Utah** | **10** | **30** | **60** |
| **Colorado** | **10** | **40** | **50** |

2. A major food manufacturer is concerned that the sales for its skinny French fries have been decreasing. As a part of a feasibility study, the company conducts research into the types of fries sold across the country to determine if the type of fries sold is independent of the area of the country. The results of the study are below. Conduct a test for independence.

| **Type of Fries** | **Northeast** | **South** | **Central** | **West** |
| --- | --- | --- | --- | --- |
| skinny fries | 70 | 50 | 20 | 25 |
| curly fries | 100 | 60 | 15 | 30 |
| steak fries | 20 | 40 | 10 | 10 |