**Contingency Table Exercises**

Question 1

The Lebanon postmaster suspects that working on ziptronic machines is the cause of high absenteeism. More than 10 absences from work without business-related reasons is considered excessive absenteeism. A check of employee records shows that 26 of the 44 ziptronic operators had 10 or more absences and 35 of 120 non-ziptronic workers had 10 or more absences. Construct a contingency table for the postmaster. Does the table support the postmaster’s suspicion that working on ziptronic machines is related to high absenteeism?

Question 2

The Egyptian Air Force brass believe that overweight pilots have slow reaction times. They attribute the poor performance of their air force in recent war games in the Sinai to overweight pilots. The accompanying data were collected for all pilots. Analyze these data for the Egyptian Air Force.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Pilot Weight** | | |
| **Reaction Time** | Normal | Up to 10 Pounds Overweight | More than 10 Pounds Overweight |
| Poor | 14 | 36 | 45 |
| Adequate | 35 | 40 | 33 |
| Excellent | 46 | 25 | 15 |

Question 3

The state personnel office oversees the state’s tuition assistance program, which pays the tuition of civil servants taking courses for an MPA. Only two schools offer an MPA degree in the state capital, Capital College of Law and East Winslow State University. Some concern is expressed by legislators that many tuition-assisted students do not graduate. Analyze the data in the accompanying table for the personnel office.

|  |  |  |
| --- | --- | --- |
|  | **Students Assisted for MPA Tuition** | |
| **Status** | Capital | East Winslow |
| Did not graduate | 69 | 83 |
| Graduated | 23 | 37 |

Question 4

As head scheduler of special events for the Incomparable Myriad (the city arena), your task is to schedule events that make a profit so that the city need not subsidize the arena. Analyze the data in the accompanying table, which is based on last year’s data, and report to the city council.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Type of Event | | | | |
| Status | Hockey Games | Religious Rallies | Basketball Games | Rock Concerts | Public Administration Conventions |
| Not Profitable | 24 | 4 | 21 | 2 | 3 |
| Profitable | 18 | 32 | 6 | 8 | 0 |

Question 5

The Cancer Institute is evaluating an experimental drug for controlling lip cancer. Eighty lip cancer victims are randomly selected and given the drug for 1 year. Sixty other lip cancer victims are randomly selected and given a placebo for a year. From the data in the accompanying table, what would you conclude?

|  |  |  |
| --- | --- | --- |
| Cancer Status | Drug Group | Placebo Group |
| Active | 58 | 42 |
| Remission | 22 | 18 |

Question 6

A professor of public administration has kept records on the class participation of his students over the past several years. He has a strong feeling (hypothesis) that class participation is related to grade in the course. For this analysis he classifies course grades into two categories, fail and pass. He operationalizes class participation as “low” if the student participated in class discussion in fewer than 25% of class periods, and “high” if the student participated in 25% or more of the periods. Based on these definitions, he has assembled the cross-tabulation below. Does a relationship exist between class participation and course grades?

|  |  |  |
| --- | --- | --- |
|  | Class Participation | |
| Grade in Course | Low | High |
| Fail | 56 | 15 |
| Pass | 178 | 107 |

Question 7

Madonna Lewis’s job in the Department of Sanitary Engineering is to determine whether new refuse collection procedures have improved the public’s perception of the department. Public opinion surveys were taken both before and after the new procedures were implemented. The results appear in the accompanying table. Analyze the table, and evaluate whether public perception of the department appears to have improved over time.

|  |  |  |
| --- | --- | --- |
| Opinion | Before | After |
| Department is doing a poor job | 79 | 73 |
| Department is doing a good job | 23 | 47 |