**Part X: Chapter 11: Independence Tests**

**One way to examine discrimination data is to analyze the relationship between variables. In the Ricci case, we want to look at the possible relationship between whether or not a candidate passed their exam and their race. To do this we can make contingency tables for each exam and then do Chi-squared tests of independence between passing and race.**

**Task 1: Use Statdisk to create two contingency tables. Fill in the tables below:**

**Lieutenant Exam:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Black** | **Hispanic** | **White** |
| **Pass** |  |  |  |
| **Fail** |  |  |  |

**Captain Exam:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Black** | **Hispanic** | **White** |
| **Pass** |  |  |  |
| **Fail** |  |  |  |

**Task 2: Perform the chi-squared independence test for the lieutenant’s position. Insert the results below.**

* **Can we conclude that the lieutenant exam results are independent of race?**
* **What does this imply about fairness in the promotion exam?**

**Task 3: Perform the chi-squared independence test for the captain’s position. Insert the results below.**

* **Can we conclude that the captain exam results are independent of race?**
* **Then does that mean we can conclude that the captain exam is not affected by race?**