

STAT 518 Homework 8

Due: Friday December 8th

1a) Consider a 2x2 contingency table

a	b	r_1
c	d	r_2
c_1	c_2	n

Assume that all the margins are equal ($r_1=r_2=c_1=c_2$). Find b, c, and d in terms of a and n.

b) Consider the table in Example 7 on page 236. Calculate the phi-coefficient, odds ratio and coefficient of colligation for this table.

c) Construct a 2x2 contingency table that has all margins equal to 100, but has the same odds ratio as the table in Example 7. (Note that the cells might not be able to contain integers.)

d) Calculate the phi-coefficient and coefficient of colligation for the table you constructed in c.

2) For the death penalty data given on the web, use SAS to fit all of the hierarchical loglinear models. Indicate which of those models fit at $\alpha=0.05$, and use ΔG^2 to select the "best" model. Interpret what this model tells us about the victim's race, the defendant's race, and whether they receive the death penalty or not.