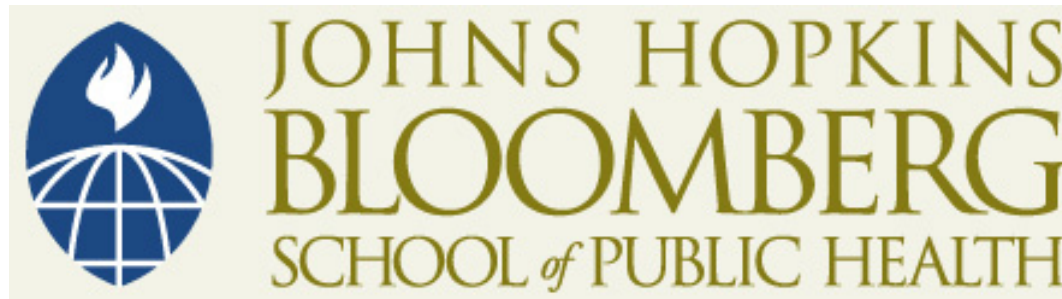


This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Your use of this material constitutes acceptance of that license and the conditions of use of materials on this site.



Copyright 2006, The Johns Hopkins University and Karl W. Broman. All rights reserved. Use of these materials permitted only in accordance with license rights granted. Materials provided "AS IS"; no representations or warranties provided. User assumes all responsibility for use, and all liability related thereto, and must independently review all materials for accuracy and efficacy. May contain materials owned by others. User is responsible for obtaining permissions for use from third parties as needed.

Statistics for laboratory scientists II

Homework problems for lecture 4

1. [Problem 10.87 in Samuels and Witmer, pg 458]

Two drugs, zidovudine (Z) and didanosine (D), were tested for their effectiveness in preventing progression of HIV disease in children. In a double-blind clinical trial, 276 children with HIV were given Z, 281 were given D, and 274 were given both Z and D. The following table shows the survival data for the three groups. [See Englund et al (1997) New England Journal of Medicine 336:1704-1712.]

<hr/>			
Result			
<hr/>			
Treatment	<i>Died</i>	<i>Survived</i>	Total
<hr/>			
<i>Z</i>	17	259	276
<i>D</i>	7	274	281
<i>Z+D</i>	10	264	274
<hr/>			

Test whether survival and treatment are independent.

- a. Calculate the chi-square test statistic and a corresponding P-value.
- b. Calculate the likelihood ratio test statistic and a corresponding P-value.
- c. Use R to perform Fisher's exact test
- d. **What do you conclude?**