

March 2, 2000

Q 1. Here is some data (totally fictitious) on the relationship between obesity and heart disease. A group of 303 adults were classified according to two characteristics. One was the by the amount they exceeded the recommended weight for their age and height and they were divide in to three groups (did not exceed the recommended weight by more than 5%, exceeded it by between 5% and 15%, and exceeded it by more than 15%) . The other was their performance in a stress test on the treadmill. Again they were divided into three groups ((1) satisfactory or slightly below par, (2) poor and (3) alarmingly poor). Here are the numbers.

	$\leq 5\%$	$5 - 15\%$	$\geq 15\%$
(1)	71	65	24
(2)	35	31	31
(3)	10	15	21

Is there any evidence in this data to support the position that obesity affects the performance on the stress test? (use 5% level of significance)

Q2. The frequencies of observed values 0, 1, 2, 3, 4 and 5 of a discrete random variable in repeated sampling were 11, 22, 31, 32, 41, 21 respectively. Is this consistent with the variable having a Binomial distribution $B(5, p)$ for some p ? (use 5% level of significance)