Quiz 1 (Individual) for Statistics 113
Statistics and Society–Spring 2000
Material Covered: Chapter 2 of notes and text
For: 28th January

This is a 15 minute quiz, worth 6% and marked out of 6 points. The total possible points awarded for each question is given in square brackets at the beginning of each question. Anything that can fit on one side of an $8\frac{1}{2}$ by 11 inch piece of paper may be used as a reference during this quiz. A calculator and appropriate statistical tables may also be used. No other aids are permitted.

Name (please print): _____ . **ID Number:** _____.
last first

Consider the following three tables of data which concern whether or not eye surgery was effective or not using either technique 1 or technique 2. The first table summarizes the data combined from two different eye clinics. The second and third tables summarizes this data separately for each of the two clinics.

	combined	technique 1	technique 2	subtotals
effective?	yes	6,450	6,500	12,950
	no	3,550	3,500	7,050
	subtotals	10000	10,000	20,000 20,000

	clinic A	technique 1	technique 2	subtotals
effective?	yes	450	5,800	5,550
	no	550	3,200	4,450
	subtotals	1,000	9,000	10,000

	clinic B	technique 1	technique 2	subtotals
effective?	yes	6,000	700	6,700
	no	3,000	300	3,300
	subtotals	9,000	1,000	10,000

(a) [1] This is most likely a(n) (circle one) **randomized experiment** / **randomized observed study** / **observed study** / **experimental study** / **controlled randomized experiment**.

(b) [1] The better technique in the combined case is technique **1** / **2**.

(c) [1] The better technique in hospital A is technique **1** / **2**.

(d) [1] The better technique in hospital B is technique **1** / **2**.

(e) [2] Simpson's paradox (circle one) **does** / **does not** occur in this case. Explain. (Give a short one to two sentence answer as to why Simpson's paradox does or does not occur in this example.)

(a) [1] **observed study**

(b) [1] **2** (since $6450/10000 < 6500/10000$)

(c) [1] **2** (since $450/1000 < 5800/9000$)

(d) [1] **2** (since $6000/9000 < 700/1000$)

(e) [2] **does not**; Simpson's paradox does not occur because the results from the two separate clinics agree with the results of the two clinics combined; namely, that technique 2 is the better technique.