

**Quiz 1 (Individual) for Statistics 113–Fall 2001**  
**Material Covered: Chapters 1,2 of Workbook and text**  
**Friday, 7th September**

Name (please print): \_\_\_\_\_ . ID Number: \_\_\_\_\_  
last first

An archeologist investigates the influence of the Aztec written language on the Spanish written language before and after the time of the conquistador Cortez in the early 1500s by counting the number of Aztec letters and symbols that appear in 450 Spanish documents of the time. For example, 100 documents contained less than 10 Aztec symbols per page before Cortez conquered the Aztec people.

number Aztec symbols →	less than 10 per page	10 or more per page	subtotals
before Cortez	100	50	150
after Cortez	200	100	300
subtotals	300	150	450

- (a) [1 point] This is a(n) (circle one) **observed study** / **randomized controlled experiment**.
- (b) [1 point] A control is (circle *best* answer)
- (i) number of documents that were written before Cortez conquered the Aztec people.
  - (ii) number of Spanish symbols.
  - (iii) number of documents with less than 10 Aztec symbols per page.
  - (iv) number of documents with less than 10 Aztec symbols per page before Cortez conquered the Aztec people.
  - (v) equal to 100.
- (c) [1 point] A good response variable is (circle *best* answer)
- (i) the proportion of documents with less than 10 Aztec symbols per page after Cortez conquered the Aztec people *minus* the proportion of documents with less than 10 Aztec symbols before Cortez conquered the Aztec people.
  - (ii) the proportion of Aztec symbols in each Spanish document with 10 or more Aztec symbols.
  - (iii) the proportion of documents with less than 10 Aztec symbols per page.
  - (iv) the proportion of documents with less than 10 Aztec symbols per page before Cortez conquered the Aztec people.
  - (v) the proportion of documents with less than 10 Aztec symbols per page that were written before Cortez conquered the Aztec people.
- (d) [1 point] To control for the confounder document length, (circle *best* answer)
- (i) the documents that were written before Cortez conquered the Aztec people are divided into documents with similar lengths and each group is then totaled.
  - (ii) the documents with less than 10 Aztec symbols per page before Cortez conquered the Aztec people are divided into documents with similar lengths and each group is then totaled.
  - (iii) the documents with more or less than 10 Aztec symbols per page before Cortez conquered the Aztec people are divided into documents with similar lengths and each group is then totaled.
  - (iv) the documents with less than 10 Aztec symbols per page before or after Cortez conquered the Aztec people are divided into documents with similar lengths and each group is then totaled.
  - (v) the table above is divided into separate tables, where each table consists of the count of documents with similar length.
- (e) [1 point] The main problem with this study/experiment is (circle one)
- (i) randomization should be used to eliminate confounders.
  - (ii) placebos were not used.
  - (iii) no control is used.
  - (iv) no blinding was used.
  - (v) there are a lot of potential confounders.

(a) **observed study**

(b) (iv)

(c) (i)

(d) (v)

(e) (v);  
page length, which Spanish documents, from where, language familiarity