Assignment 2, 1510, Solutions

Question 1) See the Solution Manual Ex. 5.8

Question 2) " " " " " 5.14

Question 3) " " " " " 8.10

Question 4) " " " " " 10.18

Question 5) " " " " " 10.24
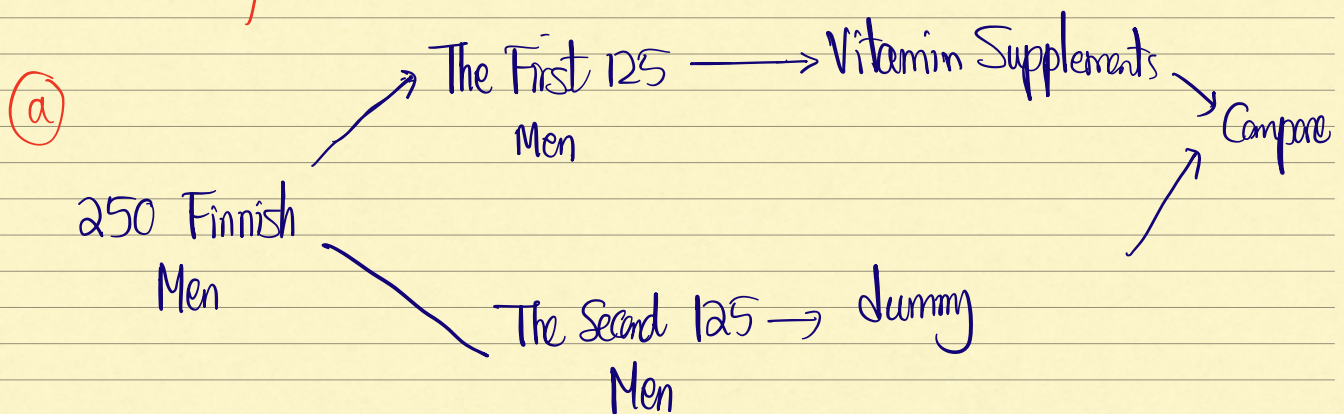
Question 6) " " " " " 10.30

Question 7)

(a) The new study is more Convincing since they ran a randomized Comprative expriment. Hence all

lurking variables/confounding effects have been controlled/ removed in the new study.

(b) No. While it's an properly design expriment, there is no significant difference between the groups.

Hence the vitamins don't perform significantly better than the placebo group. In other words, we can not conclude that vitamins prevent colon cancer.

(a)

250 Finnish Men → The First 125 Men ⟶ Vitamin Supplements → Compare

The Second 125 → dummy Men

(b) It is NOT a proper randomized comparative expriment

since the subject were NOT assigned randomly to

treatments. Hence there are many lurking / confonding variables

that we didn't control in this study.

(c) An example of confounding variable can be age of

subjects / Gender of subjects / Smoking status of

Subject and ----

To control the effect of these lurking variable,

we have to randomly assign subjects into to groups.

Question 9)

(a) This study is NOT anonymous. Since the exprimenter (the professor) see / identify the student even he/she doesnot state directly their name.

(b) The study is NOT confidential. Since the professor and other students observe the responses.

Question 10) Because of error in measuments, the values may change from one measurment to another measurment. Hence Newcomb replicated the expriment 66 times. The variability of the average

will be smaller than the variability of a

single measurment. Hence the result of the average

will be more reliable .

Question 11)

(a) Yes, the Instrument is unbiased since there is

either

NO systematic deviations towards lower values (than 16%)

and higher values (than 16% true value).

we observed values in both directions.

(b) NO, the instrument is NOT reliable.

The measured values vary dramatically from one

trial to another trail. The variability is huge

Hence, the instrument is unreliable.

Question 12) $7\% = $ town , $80\% = $ in-state

(a)
$1 - 7\% = 87\%$

of students are NOT from the town where the

school is located.

(b)
$1 - 7\% - 80\% = 1 - 87\% = 13\%$

of students are from outside the state

(c)

town (7%.)

outside (13%.)

in-state
(80%.)