

what a study design does and does not let you say

Two questions decide every answer here

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- were the people chosen at random from a population? If yes, the result can be extended to that population. If not, it describes only the people studied
- were the people assigned at random to the groups being compared? If yes, a difference between the groups can be blamed on the treatment. If not, it never can
- those two questions are independent, so a study can pass one and fail the other. Random selection buys you reach, random assignment buys you cause, and neither buys the other
- there is almost no arithmetic in this chapter. The whole task is matching the strength of a sentence to the strength of the design
- budget 40 to 60 seconds a question, comfortably inside the 95 seconds the 44-question, 70-minute Math section averages. Read the design once, read the options once, choose

this material barely appears in most school syllabi, so treat it as new learning rather than revision. It is also some of the most reliably scoreable content on the test, because the reasoning repeats almost word for word

What is this study allowed to claim

check the design against the two questions, then read off what the study supports

random sample AND random assignment

cause, for that population

the strongest claim any study on this test can support

random sample, no random assignment

association, for that population

the link is real across the population, the direction of cause is not established

random assignment, volunteers not randomly chosen

cause, for those volunteers only

the treatment worked here, and nothing is proved about anyone else

neither

a description of the people studied

no cause and no reach beyond the group measured

the third path is the one students lose points on. Volunteers randomly split into two groups can support a causal claim, but only about volunteers like them