

what one sample is allowed to tell you about a whole population



New ground, so read this slowly *

- you never get to measure everyone. A survey measures a **sample** and then makes a careful claim about the **population** it came from, and every question in this chapter is about how careful that claim has to be
- the number you compute from the sample (a sample mean, a sample percentage) is an **estimate**. The unknown number for the whole population is the thing you are estimating, and the two are almost never equal
- a different random sample of the same size would have given a slightly different estimate. That wobble is the whole reason a margin of error exists
- these questions are reading questions wearing a statistics coat. There is usually one addition and one subtraction of arithmetic in the entire question, or none at all
- so treat 40 to 60 seconds as your budget here, well under the **95 seconds** the 44-question, 70-minute Math section gives you on average. The time you save buys you a slow algebra question later

Four words the options play with

Population

every member of the group the claim is about. All 20000 households in the town

Sample

the members actually measured. The 400 households that answered

Estimate

the number the sample gives, such as a mean spend of 62 dollars

Random selection

everyone in the population had a chance of being picked. Without it, nothing generalises

swap population for sample anywhere in a sentence and you get a wrong answer that reads perfectly well. That swap is how most of the wrong options here are built

