3. Collecting Data

Starter Quiz · 课前小测

AP Statistics Name: _____ Score: _____

1. Collecting a much larger sample using the same flawed method will remove the bias.

   ☐ True ☐ False

2. Which type of study can establish a cause-and-effect relationship?

   ☐ a well-designed experiment with random assignment

   ☐ any observational study

   ☐ a large survey

   ☐ a call-in poll

3. A simple random sample (SRS) of size n gives an equal chance to...

   ☐ every possible group of n individuals

   ☐ only the first n people

   ☐ every other person

   ☐ the n most convenient people

4. A phone survey never reaches people without phones. This is...

   ☐ undercoverage

   ☐ response bias

   ☐ nonresponse

   ☐ a placebo effect

5. A fake treatment (like a sugar pill) that looks real is a...

   ☐ placebo

   ☐ factor

   ☐ block

   ☐ stratum

6. A matched-pairs design is a special case of a randomized block design with blocks of size...

   ☐ 2

   ☐ 1

   ☐ 10

   ☐ the whole sample

7. In an observational study, the researcher imposes a treatment on the subjects.

   ☐ True ☐ False

8. Random sampling is what justifies generalizing the sample result to the population.

   ☐ True ☐ False

9. Blocking groups similar experimental units to remove a known source of variability.

   ☐ True ☐ False

10. A difference too large to be reasonably explained by chance is called statistically _____.

    _____

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Answers · 答案

AP Statistics

1. **False**

   Size fights random error, not bias — a flawed method stays biased at any size.

2. **a well-designed experiment with random assignment**

   Only random assignment in an experiment supports causation.

3. **every possible group of n individuals**

   An SRS gives every group of n an equal chance.

4. **undercoverage**

   Part of the population has no chance of selection — undercoverage.

5. **placebo**

   A placebo controls for the placebo effect.

6. **2**

   Matched pairs = blocks of size 2.

7. **False**

   Observational = watch and measure without intervening; experiments impose treatments.

8. **True**

   A bias-free random method supports generalization.

9. **True**

   That's exactly the purpose of blocking.

10. **significant**

    That's the meaning of statistically significant.