Interpreting results

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. A game has win probability 0.2. After four losses, what is the chance of the next independent win? [1 mark]

The unchanged independent trial has the same chance.

Answer: 0.2

2. A device gives 48 successes in 150 trials. State the observed relative frequency. [1 mark]

$48/150 = 0.32$.

Answer: 0.32

3. Two reports give 18 and 25 successes but no trial totals. What is missing for a fair rate comparison? [2 marks]

Counts alone do not show proportions.

Answer: The number of trials in each experiment.

4. Two groups report 12 successes in 40 trials and 28 in 60. Find the combined estimate. [2 marks]

$12 + 28 = 40$ successes in $40 + 60 = 100$ trials.

Answer: 0.40

5. A simulation replaces counters, but the real game keeps the first out. Can its result be used unchanged? [3 marks]

Without replacement, the remaining counts change.

Update the collection within each trial.

Answer: No; it models different second-draw probabilities.

6. A model probability is 1/3. An experiment gives 31 successes in 90 trials. Write a conclusion with a limitation. [3 marks]

$31/90 \approx 0.344$.

Compare with 0.333... and recommend more correctly conducted trials rather than claiming proof.

Answer: The estimate is about 0.344, close to 1/3; finite-sample variation remains.