Behind the Numbers

Compare two polls about Sunday library hours.

SS24.USG.9a "Analyze how public opinion is measured through polling."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline how each poll selected respondents, circle each support percentage, and number two limits on interpreting the results. Use your marks to decide what each poll can tell you about city adults.

Who Speaks for the City?

1 The city council is considering Sunday hours at public libraries. To learn what residents think, a local newspaper asked two groups the same question: "Do you support adding Sunday hours at city libraries?" Both surveys ran during the same week. Their results differ, but a percentage alone cannot show which result better represents city adults.

2 The first poll used a random sample of city adults and obtained 600 responses by phone or mail. The second posted an open link on a neighborhood website, where 900 visitors chose to respond. People eager to debate library hours may be especially likely to click the link, even though that poll has more responses.

RESPONSES TO THE SUNDAY HOURS QUESTION

Poll	How people joined	Responses	Support
Phone or mail	Random sample of city adults	600	54%
Website	Visitors chose to respond	900	71%

3 For the random-sample poll, the estimated sampling margin of error is four percentage points at a 95% confidence level. Its 54% support estimate is consistent with population support near 50% to 58%, assuming the sampling design and calculations are sound. That margin does not cover nonresponse or misleading wording. The website poll has no comparable sampling margin of error.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does the 54% result measure, and whose opinion is the poll intended to estimate?

2. The website poll received more responses. Why might its 71% result represent city adults less accurately than the 54% result?

3. What range follows from the random-sample poll's margin of error? Does that range establish that more than half of city adults support the plan?

4. Suppose many selected adults did not respond. Would the stated margin of error account for bias if their views differed from respondents' views? Explain.

3 YOUR TURN

Your own words

Write four sentences planning a poll about whether city adults support a new bus route. Include a neutral question, a way to select respondents, one possible source of bias, and what you would check before reporting a margin of error.

ANSWER KEY

Behind the Numbers

GRADE 12 · SS24.USG.9a

PART 1 · READ AND MARK

Underline how each poll selected respondents, circle each support percentage, and number two limits on interpreting the results. Use your marks to decide what each poll can tell you about city adults. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does the 54% result measure, and whose opinion is the poll intended to estimate?	**It measures support among the 600 respondents in the random-sample poll and is intended to estimate support among city adults.**
2	The website poll received more responses. Why might its 71% result represent city adults less accurately than the 54% result?	**Website visitors chose whether to participate, so people strongly interested in the issue may be overrepresented. The larger response count does not remove that selection bias.**
3	What range follows from the random-sample poll's margin of error? Does that range establish that more than half of city adults support the plan?	**The range is approximately 50% to 58%. No, because it includes 50%, so the poll does not establish support above half at the stated confidence level.**
4	Suppose many selected adults did not respond. Would the stated margin of error account for bias if their views differed from respondents' views? Explain.	**No. The stated margin covers sampling error, not bias caused by nonresponse.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would ask, "Do you support adding a bus route between the east neighborhood and downtown?" I would use a probability sample of city adults selected through citywide addresses. Adults who do not respond might have different travel needs, so I would make follow-up contacts and report the response rate. Before reporting a sampling margin of error, I would check that it was calculated for the completed probability sample.

Accept equivalent explanations that distinguish a probability sample from voluntary participation. The margin of error describes sampling uncertainty, not every possible source of bias.