

Grade 7 - Random Sampling and Inference - Test

Common Core 7.SP.A.1, 7.SP.A.2 · maths-pdf.fr/en/

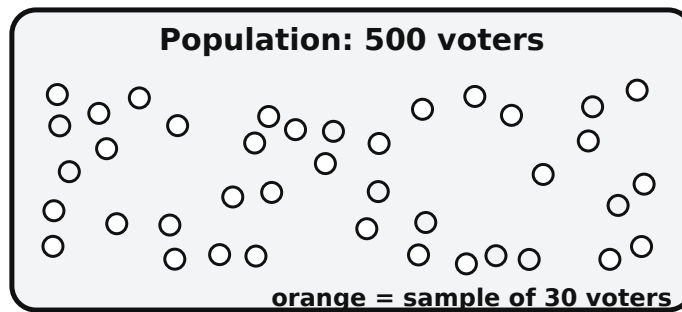
Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks populations and samples, representative and biased samples, random sampling, and using samples to estimate a population (Common Core 7.SP.A.1-2). It has 9 questions worth 20 points in all. Show your work, because most questions give partial credit for correct steps.

About this test

- Grade: Grade 7
- Chapter: Random Sampling and Inference
- Standards: 7.SP.A.1, 7.SP.A.2
- Time: 45 minutes
- Total: 20 points

Question 1 - Population and sample [2 pts]



A voter survey.

A city surveys 30 of its 500 voters. Name the population and the sample, and tell what the survey is meant to find out.

Question 2 - Choose the sample [2 pts]

Method	Description
A	Ask every 10th person who leaves a concert
B	Ask 50 people at a gym
C	Use random numbers to pick 50 residents

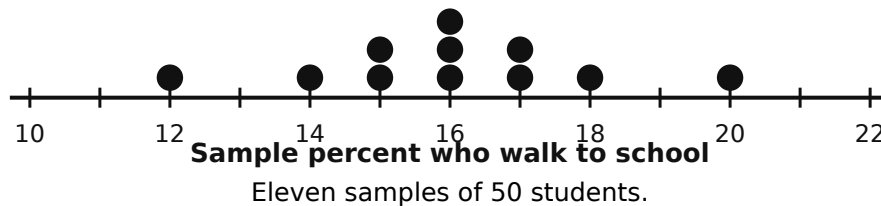
Three ways to survey about favorite music.

The city wants to know the favorite kind of music of all residents. Which method is most likely to be representative? Explain why one of the others is biased.

Question 3 - Estimate the population [2 pts]

In a random sample of 70 students, 21 ride the bus. Estimate how many of the 1,500 students in the school ride the bus.

Question 4 - Variability [2 pts]



Each dot is the percent who walk to school in a random sample of 50 students. Find the median percent. Estimate how many of 2,000 students walk.

Question 5 - Random method [2 pts]

Describe a method for choosing a random sample of 25 students from a class of 150 students. Explain why it is random.

Question 6 - Tag and recapture [2 pts]

A park ranger tags 40 deer and releases them. Later a random sample of 30 deer includes 6 tagged deer. Estimate the number of deer in the park.

Question 7 - Compare predictions [2 pts]

Aisha predicts 40% of a population like green apples from a sample of 10. Noah predicts 30% from a sample of 110 that had 33 who like green apples. Whose prediction is probably better, Grade 7 Random Sampling and Inference - Test - Maths PDF · <https://maths-pdf.fr/en/grade-7-random-sampling-test-29250>

and why?

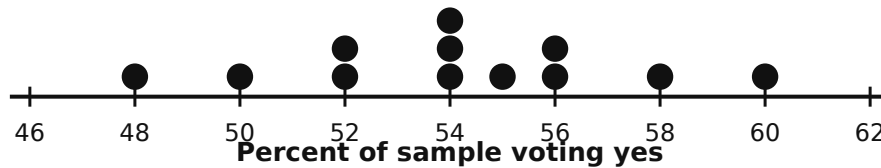
Question 8 - Three samples [3 pts]

Sample	Size	Like it
1	40	22
2	40	26
3	40	24

Three samples about a new lunch menu.

- Find the percent in each sample who like the new menu. (1 point)
- Combine the three samples and find the overall percent. (1 point)
- Use the combined percent to estimate how many of 800 students like the menu. (1 point)

Question 9 - Sampling variability [3 pts]



Twelve random samples of 100 voters.

- Find the median percent. (1 point)
- Find the range of the sample percents. (1 point)
- Estimate the number of yes votes among 20,000 voters, and explain why the estimate is not exact. (1 point)