

Name _____

Date _____ Pd. _____

Notes: Random Sampling

Sampling Techniques Suppose you want to survey students about their choice of radio stations. All students make up the _____ you want to survey. A _____ is some portion of the larger group that you select to represent the entire group. A **census** would include all students within the population. A _____ of a population is selected so that it is representative of the entire population.

Simple Random Sample	
Stratified Random Sample	A population is first divided into similar, nonoverlapping groups. A simple random sample is then chosen from each group.
Systematic Random Sample	Items are selected according to a specified time or interval.

Example 1 **SCHOOL** Ten students are chosen randomly from each high school class to be on an advisory committee with the principal.

a. Identify the sample and suggest a population from which it was chosen.

b. Classify the sample as *simple*, *stratified*, or *systematic*.

Example 2 **DOOR PRIZES** Each of the participants in a conference was given a numbered name tag. Twenty-five numbers were chosen at random to receive a door prize.

a. Identify the sample and suggest a population from which it was chosen.

b. Classify the sample as *simple*, *stratified*, or *systematic*.

Biased Sample A **biased sample** is one in which one or more parts of the population is favored over the other. Random samples are unbiased because each unit is selected without favoritism.

Example **SCHOOL** The principal of a high school wanted to know if students in the school liked the attendance policy. He decided to survey the students in the third-hour study hall about whether they like the attendance policy. Fewer than one fourth of the students in the school have a study hall.

a. Identify the sample and suggest a population from which it is chosen.

b. Classify the sample as *convenience* or *voluntary response*.

Name _____

Date _____ Pd. _____

Exit Card: Random Sampling

A sample of six students will be selected from a class of 30. Which of the following describes a method for selecting a simple random sample of six students from this class?

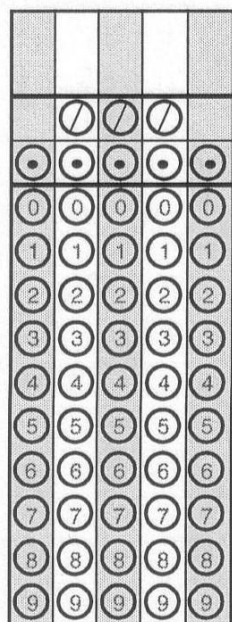
- F. Select the first six students that arrive.
- G. Put all the students' names in a hat and select six names.
- H. Randomly select a row and select six students in that row.
- J. Select the six students with the highest average grades.

A cafeteria worker surveyed 250 students to estimate the number of servings of each type of food to prepare for tomorrow.

The survey results are shown in the table below.

	Chicken	Roast Beef	Tacos	Pizza
Number	40	10	30	170

There are 1,500 students at this school. Based upon these results, how many pizzas should be prepared for tomorrow?



Name _____

Date _____ Pd. _____

Homework: Pages 711 – 713 (10 – 15 (suggest a population, state if biased, and determine if the sample is a simple random sample), 24, 25)

10. An interviewer does from house to house on weekdays between 9 A.M. and 4 P.M. to determine how many people recycle.

Population: _____

Biased? _____

Simple random sample? _____

11. A state is first divided into its 86 counties and then 10 people from each county are chosen at random.

Population: _____

Biased? _____

Simple random sample? _____

12. A scooter manufacturer is concerned about quality control. The manufacturer checks the first 5 scooters off the line in the morning and the last 5 off the line in the afternoon for defects.

Population: _____

Biased? _____

Simple random sample? _____

13. To determine who will speak for her class at the school board meeting, Ms. Finchie used the numbers appearing next to her students' names in her grade book. She writes each of the numbers on an identical piece of paper and shuffles the pieces of papers in a box. Without seeing the contents of the box, one student draws 3 pieces of paper from the box. The students whose numbers match the numbers chosen will speak for the class.

Population: _____

Biased? _____

Simple random sample? _____

14. An 8-ounce jar was filled with corn from a storage silo by dipping the jar into the pile of corn. The corn in the jar was then analyzed for moisture content.

Population: _____

Biased? _____

Simple random sample? _____

15. The gender makeup of district court judges in the United States is to be estimated from a sample. All judges are grouped geographically by federal reserve districts. Within each of the 11 federal reserve districts, all judges' names are assigned a distinct random number. In each district, the numbers are then listed in order. A number between 1 and 20 inclusive is selected at random, and the judge with that number is selected. Then every 20th name after the first selected number is also included in the sample.

Population: _____

Biased? _____

Simple random sample? _____

24. Suppose you want to sample the opinion of the students in your school about a new dress code. Describe an unbiased way to conduct your survey.

25. Suppose you are running for mayor of your city and want to know if you are likely to be elected. Describe an unbiased way to poll the voters.