

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



أوراق عمل الدرس الأول Random sampling من الوحدة الثامنة متبوعة بالحل

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التواصل الاجتماعي بحسب الصف الحادي عشر المتقدم



روابط مواد الصف الحادي عشر المتقدم على تلغرام

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المزيد من الملفات بحسب الصف الحادي عشر المتقدم والمادة رياضيات في الفصل الأول

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Random Sampling

Worksheet



Math garden
Telegram page

1) Identify each sample or question as biased or unbiased. Explain your reasoning.

- Eight citizens are asked their opinions about what trash should be collected.
- Every fortieth student who enters the school is asked to name their favorite sport
- Ten students are randomly selected to participate in a survey about home computer usage.
- A phone-in survey is taken by a radio station to see how many listeners enjoy jazz in the morning
- A shirt manufacturer wants to check quality control of their products. The plant manager decides to check every 5th shirt inspected by Inspector D. There are 15 inspectors in the plant.
- To evaluate the reliability of cars owned by its subscribers, Consumer Reports magazine publishes a yearly list of automobiles and their frequency-of-repair records. The magazine collects the information by mailing a questionnaire to subscribers and tabulating the results from those who return it
- Oranges from an orchard need to be samples to see if they are sweet enough for juice. The orchard has 25,000 orange trees. Each tree has at least 500 oranges. Claire decides to randomly choose 800 trees and test one orange from each tree
- Do you want your kids to receive a faulty education by having their school day shortened?

2) Classify the sample as simple random, systematic, self-selected, convenience, or stratified

- A sample of 1000 employees of a social media marketing company. You assign a number to every employee in the company database from 1 to 1000 and use a random number generator to select 100 numbers.
- All employees of the company are listed in alphabetical order. From the first 10 numbers, you randomly select a starting point: number 6. From number 6 onwards, every 10th person on the list is selected (6, 16, 26, 36, and so on), and you end up with a sample of 100 people.

- c) The company has 800 female employees and 200 male employees. You want to ensure that the sample reflects the gender balance of the company, so you sort the population into two strata based on gender. Then you use random sampling on each group, selecting 80 women and 20 men, which gives you a representative sample of 100 people.
- d) A teacher wants to know if a new course on how to do well on tests helps students do better. She puts a sign-up sheet outside her classroom and lets students decide for themselves if they want to take the class.

3) Determine whether each situation describes a survey, an experiment, or an observational study.

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- a) Asking people shopping at a farmer's market if they think locally grown fruit and vegetables are healthier than supermarket fruits and vegetables
- b) In a study to see if administering a medication orally or by injection makes a difference in how quickly people with back pain feel relief, a group of 400 adults suffering from back pain is divided into two groups. One group of 200 people is given the medication in pill form, while the other group of 200 people is given the medication in the form of a shot. Results for each group are compared to see if there is a difference in pain relief between the two methods
- c) Medical records of a group of long-time residents of a town are compared to the medical records of a group of long-time residents of another town. Researchers are curious to see if one town appears to be healthier in general.

Answers

Question		Answer
1	a	Yes, Biased, sample size too small
	b	No, Unbiased, systematic
	c	No, Unbiased, random
	d	Yes, Biased, responses are only from listeners who decide to call in
	e	Yes, Biased, only Inspector D's shirts are being checked
	f	Yes Biased (men would probably be better represented than women; only people who read Consumer Reports and choose to respond would be represented)
	g	No, Unbiased
	h	Yes, Biased, the question encourages a certain answer
2	a	Simple random
	b	Systematic
	c	Stratified
	d	Self-selected
3	a	Survey
	b	Experiment
	c	Observational study