

Section 1: Collecting data

Section test

- Which of the following is a simple random sample?
 - A numbered list is made of all the students in year 10 and every 10th student is selected.
 - A numbered list is made of all the students in year 10 and a random number generator is used to select students

(a) (i) only (b) (ii) only
(c) both (i) and (ii) (d) neither (i) nor (ii)
- Gita wants to survey student opinions about the school uniform policy in her school. She selects 20 girls and 20 boys at random from a list of all the students in her school. What type of sampling has Gita used?
 - Opportunity sampling
 - Stratified sampling
 - Quota sampling
 - Systematic sampling
 - Simple random sampling
- Jamie wants to collect data about whether Facebook users use other types of social media as well. He waits outside the school canteen and asks people to complete his survey as they come out. What type of sampling has Jamie used?
 - Opportunity sampling
 - Stratified sampling
 - Quota sampling
 - Systematic sampling
 - Simple random sampling
- Which one of the following statements is true, in relation to the information in the previous two questions?
 - Gita's sample and Jamie's sample are both likely to be biased
 - Gita's sample is likely to be biased but Jamie's is not
 - Jamie's sample is likely to be biased but Gita's is not
 - Neither Gita's sample nor Jamie's sample are likely to be biased

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5. Molly wants to collect data about the lengths of words in books for young children. She arranges the books in her 4 year-old brother's collection in alphabetical order and selects every fifth book. What type of sampling has Molly used?
- (a) Opportunity sampling
 - (b) Stratified sampling
 - (c) Quota sampling
 - (d) Systematic sampling
 - (e) Simple random sampling
6. Pedro wants to collect data about voting intentions in his local constituency. Which of the following methods would give Pedro a simple random sample?
- (a) select at random from the telephone directory
 - (b) select at random from the electoral register
 - (c) select at random from a complete list of addresses
7. A telephone company wants to get feedback about their service from customers who have their landline and broadband package. Which of the following methods would give a representative sample?
- (a) Telephoning a randomly chosen set of customers between 10 am and 12 noon on a weekday
 - (b) Telephoning a randomly chosen set of customers between 7 pm and 9 pm on a weekday
 - (c) Sending an email to a randomly chosen set of customers asking them to respond to an online survey
 - (d) None of the above

The following questions are about the large data set.

8. Jo wants to select a sample from the Heathrow data from the large data set of weather data from the Met office. She decides to select the data for every Monday in the period May to October 1987. What type of sampling has Jo used?
- (a) Stratified sampling
 - (b) Quota sampling
 - (c) Systematic sampling
 - (d) Simple random sampling
9. Abdul also wants select a sample from the Heathrow data from the large data set of weather data from the Met office. He numbers all the days from May 1st 1987 to 31st October 1987 and uses a random number generator to select 30 dates. What type of sampling has Abdul used?
- (a) Stratified sampling
 - (b) Quota sampling
 - (c) Systematic sampling
 - (d) Simple random sampling

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10. Maria has been sorting the Heathrow data for 1987 in order of daily maximum temperature using a spreadsheet. She then wants to select a sample for another investigation. She chooses a sample by picking the top 30 dates in the spreadsheet after sorting. Which of the following statements are true for Maria's sample?
- (a) It is a random sample
 - (b) It is likely to have more days from some months than from others
 - (c) If she did the same for 2005, she would get the same 30 days

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Section test solutions

1. Only (ii) is a simple random sample.
2. Gita has used stratified sampling.
3. Jamie has used opportunity sampling
4. Jamie's sample is likely to be biased because all the respondents are school age students and may not be representative of the whole population of Facebook users.
Gita's sample is not likely to be biased.
5. Molly has used systematic sampling.
6. Only 'Select at random from the electoral register' would give a simple random sample.
Selecting from the telephone directory would not as this does not give the whole population.
Selecting from a complete list of addresses would not as more than one person will live at some of the addresses.
7. None of these. Telephoning between 10 am and 12 am on a weekday would exclude most working people. Telephoning between 7 pm and 9 pm on a weekday would still exclude many people such as those who do shift work. Sending an email would only result in responses from those who chose to do so.
8. Jo has used systematic sampling
9. Abdul has used simple random sampling.
10. Yes, Maria's sample is likely to be biased because the 30 hottest days are unlikely to be representative of all the days, regardless of what she is investigating.