

Author: Sumayyah Noor

This step-by-step solution guide has been created by **Sumayyah Noor** for educational purposes. While we have made every effort to ensure the accuracy of the information presented, it is possible that there may be errors or omissions. We encourage users to critically evaluate and verify the content. BF Maths and the author cannot be held responsible for any errors or inaccuracies in this guide.

If you find any mistakes or have any suggestions for improvements, please contact us at bfmathshello@gmail.com. Your feedback is invaluable in helping us maintain the quality and accuracy of our resources. Please specify *which exercise and which question* in the email.

Thank you for using BF Maths for your maths revision!

1.1 Population and Samples

- 1 a. Population: The whole set of items that are of interest.
 - b. Census: Observes or measures every member of a population
 - c. Sample: A selection of observations taken from the population
- 2 a. Sampling unit: An individual unit of one population
 - b. Sampling frame: A list of the sampling unit
- 3 a. Advantage: It should give an accurate result
Disadvantage: Time consuming and expensive. Cannot be used when the testing process destroys the item. Hard to process destroys the item; hard to process large data set.
 - b. Advantage: less time consuming and expensive; less data to process
Disadvantage: the data may not be representative of the population.
- 4 a. Not sensible: too time consuming
sensible: Will use all of the data and give an accurate result.
 - b. Take a sample. Advantages: quicker and cheaper; less data to process afterward
- 5 a. The loaves will be damaged by squashing them so there will be none to sell afterwards.
 - b. A very small sample size, so may not be reflective of the overall population.
 - c. Taking a larger sample will improve reliability
- 6 a. Time consuming / costly; hard to process all data.
 - b. The individual resident of the town.
 - c. The electoral register of voters does not include people who are ineligible to vote. eg. under 18, people not registered to vote.
- 7 a. A census will destroy bulbs
 - bi. The average is greater than 800, only one of the bulbs lasted less than 800 hours, so their claim is justifiable, but not on the basis that it refers to each one.
 - bii. Increase the number of bulbs that are sampled