



S06-10min Sampling Methods: 10-minute Pack

EDEXCEL 1ST0 · Calculator allowed · about 10 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A student wants to find out the favourite lunch food of everyone in her school. She only asks the friends sitting with her at lunch.
- (a) Name the sampling method she has used. (1)
- (b) Give one disadvantage of using this method to find out about the lunch preferences of the whole school. (2)

(Total for Question 1 is 3 marks)

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- 2** Ridgeway Council wants to find the mean number of people living in each household in a town with 12000 households.
- (a) Write down the term used for collecting data from every household in the population, rather than from a sample of them. (1)
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- (b) Give one advantage of the council surveying a sample of 300 households instead of taking a census. (1)
- (c) Give one advantage of taking a census instead of a sample in this situation. (1)
- (d) Give one disadvantage of the council taking a census of all 12000 households. (1)

(Total for Question 2 is 4 marks)

3 Fenwick Electronics has 3400 loyalty card holders, each with a unique membership number from 0001 to 3400. The company wants a simple random sample of 20 card holders.

(a) Describe how the company could use a random number generator to select this sample. **(3)**

(b) Give one advantage of using a random number generator instead of a person picking numbers 'at random' by eye. **(1)**

(Total for Question 3 is 4 marks)

Mark scheme · S06-10min Sampling Methods: 10-minute Pack

Question 1

- (a) **B1** Convenience sampling cao
- (a) **Answer: Convenience sampling**
- (b) **B1** identifies that her friends may not represent the tastes of the whole school, oe
- (b) **B1** explains that friendship groups often share similar tastes/backgrounds, so the results could be biased towards her own circle, oe
- (b) **Answer: Her friends are unlikely to represent the whole school; friendship groups often share similar tastes, so the results may be biased.**

Question 2

- (a) **B1** Census cao
- (a) **Answer: Census**
- (b) **B1** a sample is quicker and cheaper to carry out and process than surveying all 12000 households, oe
- (b) **Answer: A sample of 300 is much quicker and cheaper to carry out than contacting all 12000 households.**
- (c) **B1** a census gives completely accurate results for the whole population, with no sampling error, oe
- (c) **Answer: A census gives an exact result for the whole population, with no sampling error.**
- (d) **B1** collecting and processing data from all 12000 households takes much longer and costs much more than a sample, oe
- (d) **Answer: It would take a very long time and be expensive to contact and process data from all 12000 households.**

Question 3

- (a) **B1** generates random numbers between 0001 and 3400, oe
- (a) **B1** matches each generated number to the card holder with that membership number, oe
- (a) **B1** ignores any repeated numbers and continues until 20 different card holders are chosen, oe
- (a) **Answer: Use a random number generator to produce numbers between 0001 and 3400, select the card holder matching each number, ignore any repeats, and continue until 20 different card holders have been chosen.**
- (b) **B1** removes human bias/judgement from the selection, so the sample is genuinely random, oe
- (b) **Answer: It removes human bias, since a person choosing 'at random' often unintentionally favours certain numbers.**