

# GCSE Statistics - Diagnostic test

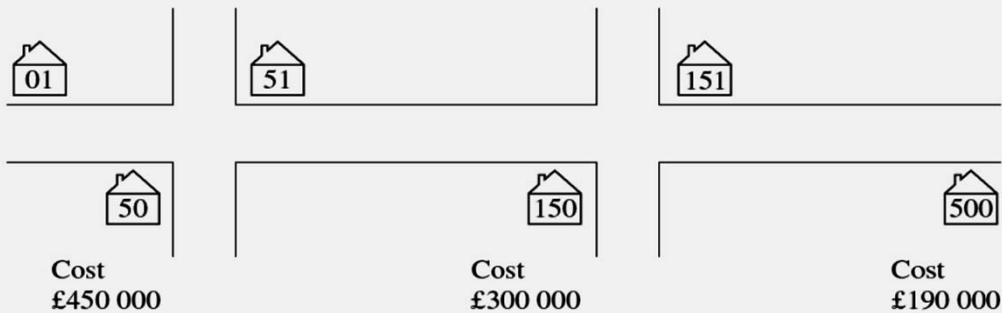
## Sampling

NAME: \_\_\_\_\_

**1**

The diagram shows the layout of a new housing estate in Stokeville.

Houses numbered 01 to 50	cost £450 000 each
Houses numbered 51 to 150	cost £300 000 each
Houses numbered 151 to 500	cost £190 000 each



The house builder agrees to undertake a sample survey to find out residents' views on introducing parking charges on the estate.

He decides to question one female from each of the houses numbered 31 to 50 on the estate.

(a) Give **two** reasons why this method of sampling is unsuitable.

Reason 1 .....

.....

Reason 2 .....

.....

*(2 marks)*

At a later date the builder extends the survey by selecting a simple random sample of 50 houses from the 500 on the estate.

(i) Explain how the sample could be chosen in this case.

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.....

.....

*(2 marks)*

(ii) Why might a stratified sample be more appropriate in this case?

.....  
.....  
(1 mark)

(iii) In a stratified sample, how many houses costing £300 000 would be included in a sample of 50?

.....  
.....  
Answer ..... (2 marks)

2

Boris is investigating if the distance from a polling station affects whether people usually vote in his town.

He plans to ask a random sample of people some questions.

(a) Define the population for this survey.

.....  
.....  
(2 marks)

3

A youth club has 72 members.  
The leader decides to select six members at random to go on a sailing course.  
He numbers the members 01 to 72 and uses the random number table below to make his selection.

29	44	76	56
44	51	38	00
07	21	92	17

(a) Starting with 29 and reading across each row, write down the number of each of the six members that he selects.

Answer ..... (3 marks)

(b) The youth club has 48 boys and 24 girls as members.

Calculate the number of boys and girls the leader should include in a stratified sample of six members.

.....  
.....  
Boys .....  
Girls .....  
(3 marks)

Total \_\_\_\_\_ out of 15