



H23-test Pilot Surveys (Higher): Test Pack

EDEXCEL 1ST0 · Calculator allowed · about 20 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A university student is investigating whether students support a proposed new bus route to campus. Before her main survey of the whole student population, she pilots her questionnaire on 8 course-mates who study on her own course.
- (a) Identify a problem with how the student chose her pilot sample, and explain why it is a problem. (2)
- (b) Suggest a better way for the student to select her pilot sample. (2)

(Total for Question 1 is 4 marks)

- 2** A dentist's surgery emails a link to a short feedback survey to a pilot group of 25 patients. Only 9 patients complete it.
- (a) Give one reason why some patients might not have responded to this pilot survey. (1)
- (b) Explain why a response rate this low, found during the pilot, could be a problem if the same method were used, unchanged, for the main survey. (2)

(Total for Question 2 is 3 marks)

- 3** A college has 750 students, made up of 450 in Year 12 and 300 in Year 13, as shown in the table.

Year group	Number of students
Year 12	450
Year 13	300

Before running a full survey about a proposed new common room, the college pilots its questionnaire using a stratified sample of 50 students.

- (a) Work out how many Year 12 students and how many Year 13 students should be included in this stratified pilot sample. (3)

- (b) Of the 30 Year 12 students given the pilot questionnaire, 27 respond. Of the 20 Year 13 students, 12 respond. Work out the overall response rate for the pilot survey, as a percentage. (2)

(Total for Question 3 is 5 marks)

- 4** A phone network plans to survey all 2,000,000 of its customers about a new tariff. Before this, it pilots the survey on 150 customers.

Discuss the benefits and limitations of using a pilot survey in this situation.

(Total for Question 4 is 3 marks)

5 A researcher claims: "The bigger a pilot survey is, the better it always is."

Evaluate this claim.

(Total for Question 5 is 3 marks)

Mark scheme · H23-test Pilot Surveys (Higher): Test Pack

Question 1

- (a) **B1** identifies that all 8 pilot respondents share the same course, so are not representative of the whole student population
- (a) **B1** explains that problems found (or not found) in this pilot might not reflect problems that would occur with the wider student population, e.g. students on other courses may have different travel patterns/views
- (a) **Answer: All 8 respondents are on her own course, so they are not representative of the whole student population; problems that would affect students on other courses might not show up in this pilot.**
- (b) **B1** suggests selecting students from a range of courses, year groups or halls of residence, e.g. a random or stratified sample
- (b) **B1** explains this would make the pilot sample more representative of the population being surveyed in the main survey
- (b) **Answer: She should select pilot respondents from a range of different courses and year groups, for example using a random sample, so the pilot is more representative of the whole student population.**

Question 2

- (a) **B1** any valid reason, e.g. the email was missed/went to a spam folder, or patients did not have time, or patients were not comfortable giving feedback online
- (a) **Answer: The email might have gone to a spam folder, or patients simply did not have time to complete it.**
- (b) **B1** identifies that too few responses would likely be collected overall if the same low rate continued at a larger scale
- (b) **B1** identifies that patients who do respond might not be typical of all patients (e.g. only those with strong opinions reply), so conclusions from the main survey could be biased
- (b) **Answer: Too few patients would respond to give a reliable sample size in the main survey, and the small number who do respond might not be typical of all patients, for example only those with strong opinions might reply, so the conclusions could be biased.**

Question 3

- (a) **M1** $450/750 \times 50$, or (or equivalent ratio method)
- (a) **A1** 30 cao (Year 12)
- (a) **A1** 20 cao (Year 13)
- (a) **Answer: 30 Year 12 students and 20 Year 13 students**
- (b) **M1** $(27 + 12)/50$, or
- (b) **A1** 78% cao
- (b) **Answer: 78%**

Question 4

- **B1** a clear overall judgement is given (e.g. the pilot is worthwhile, even though it has some limitations), rather than only listing points
- **B1** a benefit is explained, e.g. testing on 150 customers is quick and low-cost, and can reveal problems with the questionnaire before it is sent to all 2,000,000 customers
- **B1** a limitation is explained, e.g. 150 is a tiny fraction of 2,000,000 customers (0.0075%), so the pilot might not reveal rarer problems that only affect a small number of customers, such as those with unusual tariffs or devices
- **Answer: Running a pilot survey is worthwhile. Testing on 150 customers is quick and low-cost, and lets the phone network fix problems with the questionnaire before spending time and money contacting all 2,000,000 customers. However, 150 is a tiny fraction (0.0075%) of 2,000,000, so rarer problems, such as issues affecting customers with unusual tariffs or devices, might not be revealed by the pilot.**

Question 5

- **B1** the claim is correctly judged to be false/not always true
- **B1** a valid justification: beyond a certain size, a much bigger pilot reveals little extra information, since most wording or logistical problems would already show up in a smaller trial
- **B1** a different valid justification: a very large pilot uses up time, cost and potential respondents that were intended for the main survey, which works against the purpose of piloting cheaply first
- **Answer: The claim is false. Beyond a certain size, a much bigger pilot reveals little extra useful information, because most wording or logistical problems would already have shown up in a smaller trial. A very large pilot also uses up time, cost and potential respondents meant for the main survey, which defeats the point of piloting cheaply first.**