

STAT220: WINTER 2006: QUIZ 1: JAN 19

Student name

Section

Please fill in your name and section.

Answer both the questions, on the question paper.

It should take at most 20 minutes to complete this quiz.

Continue your answer on to the back of the piece of paper if necessary.

1. (**Explain your answers**) A small undergraduate college has 4000 students, evenly distributed among the four classes: freshman, sophomore, junior, senior. A survey is designed to investigate the types of employment undertaken by students.

(i) (2 points). A complete alphabetical list of the students is available; it is proposed to take every 20 th. name on the list (that is, number 20, 40, 60, 80, ..., number 4000). Is this an acceptable sample? Is it a simple random sample?

(ii) (2 points). Another proposal is that four interviewers should be chosen, one from each class, and that each should take the first 50 people they meet from their class as their sample. Is this an acceptable sample?

(iii) (2 points) Propose another scheme that combines good features of the two proposals (i) and (ii).

2. (**One-word answers are sufficient**) The following three histograms show the distribution of annual household incomes (in units of \$1000) in three suburbs Avondale (A), Burnaby (B) and Chester (C) of a large US city.

(i) (2 points) City Councillors are interested in what proportion of households have income more than \$50,000 per year. For each of the 3 suburbs, is this proportion about equal half, well over half, or well under half?

Avondale:	Burnaby:	Chester:
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(ii) (1 point) In one suburb, there are two quite different groups of households, one quite well off and the other much poorer. Which suburb?

(iii) (1 point) In Burnaby, are there more households with incomes in the range \$40,000 to \$50,000 than in the range \$90,000 to \$100,000? (Yes or no.)