

Unit 4 *Sampling*

Text Answers

4.1 Questionnaires and Surveys

1. (a) The wording of the last question implies that it is linked to the question above it., which uses emotive language (i.e. 'killing'). A better third question on the LHS is "What sources of protein exist?"

4. e.g. What public transport services exist in your nearest town/city?

In each case, rate these according to their value:

- 5 Excellent
 4 Good
 3 Adequate
 2 Poor
 1 Very poor

<i>Public Transport Service</i>	<i>Y /N</i>	<i>Value (scale of 1 - 5)</i>
BUS		
TRAIN		
COACH		
TRAM		
TUBE		

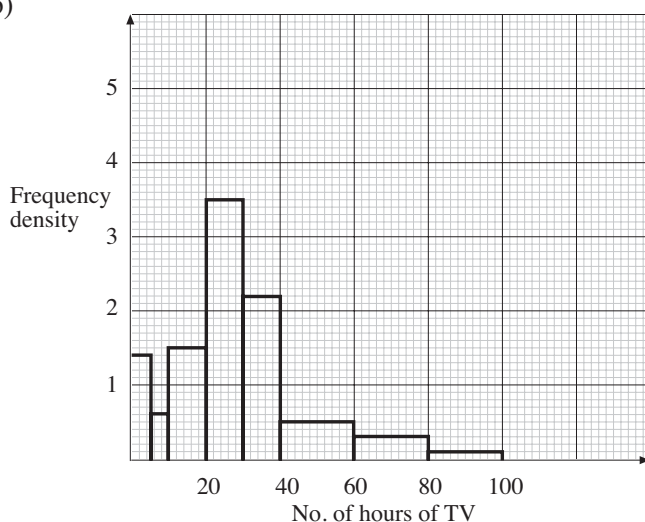
7. Question (A) gives genuine answers – although they may be difficult to analyse.
 Question (B) will give precise answers to just three aspects of life on this housing estate.
8. (a) Cycling and Swimming
10. (a) The percentage late is given by:
- | | | | | |
|-----|-------|-----|------|---|
| Bus | Cycle | Car | Walk | |
| 27% | 20% | 22% | 13% | so her conclusion is supported by the data. |
- (b) Choose pupils randomly, do not always use Tuesdays, increase sample size.
 (c) Wrong – because you do not know whether there was an equal number of Y7 and Y8 pupils in the survey.
12. Sample is not random; sample value of 19% is not necessarily true for the whole population; they may only have travelled once on a bus in the last week – not each day.

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4.2 Sampling

1. (a) Possible answers: (i) C, F, I, L, O, R, U, X. (ii) D, H, L, P, T, X.
(iii) F, L, R, X.
- (c) Number 24 balls and place in a bag, then draw out the relevant number of balls to correspond with the number of machines.
2. 13, 13, 14, 14, 13, 7, 6 (taking the integer part of each answer plus the two greatest remainders to give a sample of size 80)
3. (a) 1, 2, 1, 13, 3. (b) 12
4. (a) No (b) Change 5 to 6 and change 4 to 5.
5. (a) Working either across the rows or down the columns, choose, for example, the 5th square in each case.
6. (a) Not everyone is listed in the telephone directory or even has a telephone.
(b) It would give a biased sample as it would include only people who regularly shop in a shopping arcade.
(c) Again, biased, as only a minority of people go to a football match. The sample would also probably be heavily gender-biased.
(d) Very biased sample as subjects would have to both belong to the golf club and have red cars!
9. (a) (i) 49, 36, 15. (ii) This ensures that each age cohort has a fair representation.
(b)



Note: each person is represented by 5 small squares.