

14. Some of the people visiting a historic site in Wales signed the visitors' book and left their addresses. The table below shows the frequency distribution of the country of origin of this group of visitors.

Country of origin	Number of visitors
Wales	92
England	64
Scotland	22
Ireland	30
France	12

(a) Advertising material is to be sent to some visitors. A random sample of size 20 stratified on the basis of country of origin is to be selected from the above group of visitors for this purpose. Find the number of people from each of the five countries that should be selected for the sample.



[5]

(b) Use the following extract from a table of random digits to show how you would select 8 persons from a list of the 92 visitors from Wales for the sample. Explain your method.

34	45	98	78	13	45	03	65	72	39	92
57	06	34	39	08	99	62	29	81	47	11

[3]

7. A random sample of people at work revealed the following information regarding their type of job and their gender.

	Management	Clerical	Other
Female	16	63	82
Male	14	70	105

(a) Use this information to estimate the probability that a randomly chosen person at work is in management.



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(b) Estimate the number of people in management jobs in a workforce of 700 000.

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[2]

14. The Headteacher of a school wants to investigate opinions of pupils about meals sold in the canteen. She asks the first 20 pupils in the queue for dinner their opinion.

- (a) Explain why this is not a satisfactory method of selecting a sample of pupils to ask about school meals.



[1]

- (b) Explain how the Headteacher could select a random sample of 20 pupils.

[2]

17. The table shows the details of the departments in a computer company.

Department	Number of people employed
Management	36
Sales staff	182
Software technicians	62
Hardware engineers	48
Administration assistants	30

A stratified random sample of the people employed is to be selected to form a committee. Calculate the number of people from each department who should be selected to form a committee of size 20.



Complete the table below.

Department	Number of people on the committee
Management	
Sales staff	
Software technicians	
Hardware engineers	
Administration assistants	

6. A sample of boys and girls at a school yielded the following results for their eye colour.

	Blue	Brown	Green	Other	Total
Boys	28	40	10	22	100
Girls	32	30	8	10	80

There are 930 boys and 720 girls at the school. Use the results of the sample and these totals to find an estimate for the total number of pupils in the school with brown eyes.



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19. A survey is to be carried out on a Monday afternoon by the cinema management to ascertain views of the public on the choice of films screened at a local cinema.

Give reasons why asking every tenth person outside the cinema will not give

- (a) a representative sample,



[1]

- (b) a random sample.

[1]