AMS 102: QUIZ 1

SOLUTIONS

For the total of 50 points answer the following two questions. Whenever possible, write in complete sentences. Show all your computations. You have 15 minutes.

1. The town of Southampton hired Rodent Measure Inc. to determine the average length of a squirrel's tail in Southampton. The study was performed through sampling. All squirrels living on Stony Brook Southampton campus were caught, had their tails measured, and were then released.

(a) What was the population in this study?

The population is all squirrels living in Southampton.

(b) Is the selection likely to be biased? Why?

The selection is likely to be biased because not every squirrel has an equal chance of being included in the sample. Squirrels living far away from campus have very little chance of appearing in the sample.

(c) How do we usually avoid bias in selection?

To avoid bias, selection must be random.

OVER, PLEASE

SOLUTIONS

2. A 100 computer owners were asked about the operating system on their personal computers. Their responses and gender are recorded in the following table:

		Operating System		
		Windows	Mac OS	Linux
Gender	Male	39	6	3
	Female	42	9	1

(a) What is the marginal distribution of Operating System?

Operating System				
Windows	Mac OS	Linux		
81%	15%	4%		

Total number of Windows users: 39 + 42 = 81; Mac OS: 6 + 9 = 15; Linux: 3 + 1 = 4. Total number of subjects: 81 + 15 + 4 = 100. Thus values for marginal distribution are $\frac{81}{100}100\%$, $\frac{15}{100}15\%$, $\frac{4}{100}100\%$.

(b) Construct a bar graph displaying the marginal distribution of Operating System (obtained in part (a)).



2