**1.** The Public Health Service studied the effects of smoking on health, in a large sample of representative households. For men and for women in each age group, those who had never smoked were on average somewhat healthier than the current smokers, but the current smokers were on average much healthier than those who had recently stopped smoking.

**(a)** Why did they study men and women and the different age groups separately?

**(b)** The lesson seems to be that you shouldn’t start smoking, but once you’ve started, don’t stop. Comment briefly.

**2.** Ads for ADT Security Systems claim

When you go on vacation, burglars go to work……According to FBI statistics, over 25% of home burglaries occur between Memorial Day and Labor Day.

Do the statistics prove that burglars go to work when other people go on vacation? Answer yes or no, and Explain briefly.

**3.** (Hypothetical) A study is carried out to determine the effect of party affiliation on voting behavior in a certain city. The city is divided up into wards. In each ward, the percentage of registered Democrats who vote is higher than the percentage of registered Republicans who vote. True or False: for the city as a whole, the percentage of registered Democrats who vote must be higher than the percentage of registered Republicans who vote. If true, why? If false, give an example?

**4.** The age distribution of people in the U.S. in 2004 is shown below. **Draw the histogram**. (The class intervals include the left end point, not the right; for instance, on the second line of the table, 14% of the people were age 5 years or more but had not yet turned 15. The interval for "75 and over" can be ended at 85. Men and women are combined in the data.) Use your histogram to answer the following questions. **(Please draw the histogram.)**

**(a)** Are there more children age 1, or elders age 71?  
**(b)** Are there more 21-year-olds, or 61-year-olds?  
**(c)** Are there more people 0-4, or 65-69?  
**(d)** The percentage of people age 35 and over is around 25%, 50%, or 75%?

Age percent of population Age Percent of population

0-5 7 35-45 15

5-15 14 45-55 14

15-20 7 55-65 10

20-25 7 65-75 6

25-30 7 75 and over 6

30-35 7