Solve the problem.

   1) A gardener has 75 clients, 45% of whom are businesses. Find the number of business clients.

Form a conclusion about statistical significance. Do not make any formal calculations. Either use the results provided or make subjective judgments about the results.

   2) Last year, the average math SAT score for students at one school was 475. The headmaster introduced new teaching methods hoping to improve scores. This year, the mean math SAT score for a sample of students was 481. Is there statistically significant evidence that the new teaching method is effective? If the teaching method had no effect, there would be roughly a 3 in 10 chance of seeing such an increase. Does the result have statistical significance? Why or why not? Does the result have practical significance?

a) Use critical thinking to find the flaw in the sampling method.

   3) You plan to make a survey of 200 people. The plan is to talk to every 10th person coming out of the school library. Is there a problem with your plan?

   4) A researcher published this survey result: "74% of people would be willing to spend 10 percent more for energy from a non-polluting source". The survey question was announced on a national radio show and 1,200 listeners responded by calling in. What is wrong with this survey?

   5) "38% of adults in the United States regularly visit a doctor". This conclusion was reached by a college student after she had questioned 520 randomly selected members of her college. What is wrong with her survey?