**Psy 330 Sampling**

Case 1  
The Nielsen organization used to rate TV shows by the following method. They chose a panel of homes with TV sets, and attached a meter to each set. The meter recorded the times at which the set was on, and which channel it was tuned to. At the end of each month, the meters were read, and the Nielsen people computed the total number of hours spent by panel members watching each TV show. The Nielsen ratings were based on this total. The panel was seldom changed. The distribution of advertising revenue to the networks was (and still is) based in large part on ratings of this type, with a lot of money hanging in the balance.

1. Using the language of sampling, briefly [discuss](http://www.stat.ucla.edu/cases/nielsen/nielsen-answer.php) whether this is a good way to estimate national television-watching habits. Why or why not?
2. Suggest a better way of sampling.

Case 2  
In 1965, the U.S. Supreme Court decided the case of Swain vs. Alabama. Swain, a black man, was convicted in Talladega County, Alabama, of raping a white woman. He was sentenced to death. The case was appealed to the Supreme Court on the grounds that there were no blacks on the jury; moreover, no black "within the memory of persons now living has ever served on any petit jury in any civil or criminal case tried in Talladega County, Alabama."

The Supreme Court denied the appeal, on the following grounds. As provided by Alabama law, the jury was selected from a panel of about 100 persons. There were 8 blacks on the panel. (They did not serve on the jury because they were "struck," or removed, through a maneuver called peremptory challenges by the prosecution. Such challenges were until quite recently constitutionally protected.) The Supreme Court ruled that the presence of 8 blacks on the panel showed "The overall percentage disparity has been small and reflects no studied attempt to include or exclude a specified number of blacks."

At that time in Alabama, only men over the age of 21 were eligible for jury duty. There were 16,000 such men in Talladega County, of whom about 26% were black.

1. Because simple random sampling was used to select 100 men from this population, is it even possible to obtain a biased sample? Explain.
2. What do you conclude about the Supreme Court's opinion?
3. How could the sampling process be modified to avoid this type of nonrepresentative sample?