LAST NAME	FIRST NAME	DATE

1 (5 points)**.** For each of the following examples, determine the type of sampling procedure used: **simple random**, **systematic**, **stratified**, **cluster**, or **convenience**.

   (a) A researcher wants to examine the population of US city dwellers, and so she picks 20 US cities at random, and administers the test to 12 residents of each chosen city.

   (b) A statistician wants to explore the population of US college students, so he takes a sample of 2000 students, making sure that 25% of the sample are Math majors, 25% of the sample are English majors, and the remaining 50% of the sample are other majors.

   (c) A retail worker wants to figure out the average cost of rent in her town, so she talks to some of her coworkers, the ones who seem nice enough, and asks them how much rent they pay every month.

   (d) A pollster would like to take a sample of opinions from people who attend a political rally, so she stands near the exit gate and attempts to solicit a response from every 50th person who walks out of the rally.

   (e) A marketing researcher wants to take a sample of opinions from shoppers living in the area, so he selects 40 random phone numbers from the local listings, and then makes calls to the people so chosen.

2 (3 points)**.** Describe the sampling techniques used at each stage of the following example of multistage sampling. A survey on drug use in US high schools first selects 5 US states at random, then 10 high schools in each selected state, and then 30 freshman, 30 sophomore, 30 junior, and 30 senior students in each one of the selected schools.

3 (4 points). For each of the following scenarios, describe probable and possible sources of bias, and what kind of samples are more likely than others.

    (a) A public health survey on exercise habits among San Francisco residents recruits volunteer participants out of the attendees of a local marathon event.

    (b) A study of driving habits in the Northern California relies on a sample of vehicles observed driving on Interstate 5.