Lesson 14 Practice Problems

1. The meat department manager at a grocery store is worried some of the packages of ground beef labeled as having one pound of meat may be under-filled. He decides to take a sample of 5 packages from a shipment containing 100 packages of ground beef. The packages were numbered as they were put in the box, so each one has a different number between 1 and 100.

   Describe how the manager can select a fair sample of 5 packages.

2. Select **all** the reasons why random samples are preferred over other methods of getting a sample.

   A. If you select a random sample, you can determine how many people you want in the sample.

   B. A random sample is always the easiest way to select a sample from a population.

   C. A random sample is likely to give you a sample that is representative of the population.

   D. A random sample is a fair way to select a sample, because each person in the population has an equal chance of being selected.

   E. If you use a random sample, the sample mean will always be the same as the population mean.

3. Jada is using a computer's random number generator to produce 6 random whole numbers between 1 and 100 so she can use a random sample. The computer produces the numbers: 1, 2, 3, 4, 5, and 6. Should she use these numbers or have the computer generate a new set of random numbers? Explain your reasoning.

4. A group of 100 people is divided into 5 groups with 20 people in each. One person's name is chosen, and everyone in their group wins a prize. Noah simulates this situation by writing 100 different names on papers and putting them in a bag, then drawing one out. Kiran suggests there is a way to do it with fewer paper slips. Explain a method that would simulate this situation with fewer than 100 slips of paper.

(From Unit 8, Lesson 6.)

5. Data collected from a survey of American teenagers aged 13 to 17 was used to estimate that 29% of teens believe in ghosts. This estimate was based on data from 510 American teenagers. What is the population that people carrying out the survey were interested in?

   A. All people in the United States.

   B. The 510 teens that were surveyed.

   C. All American teens who are between the ages of 13 and 17.

   D. The 29% of the teens surveyed who said they believe in ghosts.

(From Unit 8, Lesson 12.)

6. A computer simulates flipping a coin 100 times, then counts the longest string of heads in a row.

   Based on these results, estimate the probability that there will be at least 15 heads in a row.

trial	most heads in a row
1	8
2	6
3	5
4	11
5	13

(From Unit 8, Lesson 7.)