Chapter 2 Problems

1. A sequence of seven people walk into a post office (one at a time) and only their genders are noted. Write a partition of the sample space, where the events are defined according to how many of the seven people are female. (So there should be eight events in the partition.)

[Food for thought (this not required!)—If each of the seven customers is “equally likely” to be a man or a woman, what are the probabilities associated with each of these events?]
2. One song is chosen at random from your mp3 player. (If you don’t have one, the please borrow one from your boyfriend/girlfriend/neighbor/uncle/grandmother/librarian/etc.) Write a partition of the sample space according to the genre of music that appears.

How could you find the probability that a song from your favorite genre appears? What is this probability, in your case?
3. A customer waits for a bus to appear. Write a partition for his waiting time into five-minute intervals.
4. The governor of Indiana needs to devise a scheme for classifying cities according to
the amount of rainfall received annually. (He does not care what happens each day, each
month, etc.; he only wants to know about the annual rainfall.)

As the possible future mayor of West Lafayette you need to devise such a classification.
Write some events about West Lafayette for this purpose. Your events should be a partition
of the sample space, so that all possibilities are handled by your scheme.
5. Create your own scenario. Describe the problem and the related events and probabilities (you can also incorporate a partition if you like, but this is not necessary at all).
6. Create another scenario. Describe the problem and the related events and probabilities (you can also incorporate a partition if you like, but this is not necessary at all).