

## Quiz Chapter 1 Problem 5

You are interested in the opinions of all American school teachers about establishing a national test for high school graduation. Hence, the population consists of all American school teachers, and thus the answer is **d**.

It is tempting, however, to think that the answer is **c**, because the sample was selected only from the list of all members of the National Education Association.

Hence, **c** or **d**?

The correct answer would be **d** because this is the population that we want to know about (the “target” population). However, we have conveniently decided to use the available for us list of all members of the National Education Association to select a sample of teachers, and this is *convenience sampling*. Hence, we shall likely get a biased opinion about all American teachers from our survey.

However, we shall get good information about the opinions of the members of the National Education Association, and the sample of 2500 teachers chosen at random from this list would be a good sample. Hence, if we shrink our population of all American teachers to only those who are on the National Education Association list, then the answer would be **c**. But the very first sentence of the problem says that our population consists of all American school teachers, and so the answer is **d**.

**An additional question:** What is the sample? Would it be the 1347 teachers who mail back the questionnaire, or the 2500 teachers to whom you mailed the questionnaire? This is a somewhat tricky question to answer. If we think that samples produce actionable data, then we could say that the sample consists of the opinions of the 1347 teachers who mailed back the questionnaire. But if we are interested in the response rate of the American teachers, then 2500 would be the “actionable” sample, and the statistic (the response percentage) would be  $1347/2500=0.5388$ , which is 53.88 percent.