

Chapter 2, Quiz 1, Form B

Answer Key

1. Although we may get better information from a census, it is usually far too costly and time consuming to contact every member of the population. A large random sample will be nearly as good for far less cost.
2. A simple random sample is selected from a population without restriction – every subset of size n is equally likely to occur. However, with a stratified sample the researcher intervenes to ensure each stratum is represented in the sample.
3.
 - a) Stratified random sampling.
 - b) Since the manager wants to take noise into account, it would be best to stratify by “rows.” That is, one stratum would be the 12 rooms in building A facing the road, since they are the most similar with regard to noise. The next strata would be the 12 rooms on the other side of building A, etc. Then, in each of the 4 strata, we need to take a random sample of size 3. To do this we can write the 12 room numbers on 12 sheets of paper, mix them up in a hat, and choose three for each strata.
4.
 - a) Bias is the tendency for a sample to differ from the corresponding population in some systematic way.
 - b) Selection bias occurs when some part of the population is systematically excluded from the sample. However, non-response bias occurs when responses are not actually obtained from the individuals who were selected for the sample.