



4. What is the best way to answer each of the questions below: an experiment, a sample survey, or an observational study that is not a sample survey? Explain your choices.
  1. Are people generally satisfied with how things are going in the country right now?
  2. Do college students learn basic accounting better in a classroom or using an online course?
  3. How long do your teachers wait on average after they ask their class a question?
5. A study showed that women who work in the production of computer chips have abnormally high numbers of miscarriages. The union claimed that exposure to chemicals used in production caused the miscarriages. Another possible explanation is that these workers spend most of their work time standing up. Illustrate these relationships in a diagram.
6. A study shows that there is a positive correlation between the size of a hospital (measured by its number of beds  $x$ ) and the median number of days  $y$  that patients remain in the hospital. Does this mean that you can shorten a hospital stay by choosing a small hospital? Use a diagram to explain the association.
7. Students sign up to be subjects in a psychology experiment. When they arrive, they are told that interviews are running late and are taken to a waiting room. The experimenters then stage a theft of a valuable object left in the waiting room. Some subjects are alone with the thief, and others are in pairs – these are the treatments being compared. Will the subject report the theft? The students had agreed to take part in an unspecified study, and the true nature of the experiment is explained to them afterward. Do you think this study is ethically OK?