

Chapter 2:

1. What are clear definitions of inductive and deductive reasoning? Give examples.

Answer: Deductive reasoning, or deduction, is making an inference based on widely accepted facts or premises. If a beverage is defined as "drinkable through a straw," one could use deduction to determine soup to be a beverage. Inductive reasoning, or induction, is making an inference based on an observation, often of a sample.

4. What is the difference between a hypothesis and a theory? Give examples

Answer: A hypothesis is an assumption made before any research has been done. It is formed so that it can be tested to see if it might be true examples: "Smoking is a prominent cause of lung cancer." The dependent variable, lung cancer, is dependent on the independent variable, smoking. A theory is a principle formed to explain the things already shown in data. Example: Physics: the big bang theory, atomic theory, theory of relativity, quantum field theory.

7. What is the difference between a positive correlation and a negative correlation? Give examples

Answer: an example of positive correlation would be height and weight. Taller people tend to be heavier. A negative correlation is a relationship between two variables in which an increase in one variable is associated with a decrease in the other.

8. What is experimenter bias, and what is a strategy that experimenters can use to minimize this effect?

Answer: Experimenter bias is when the researcher's expectations may skew the study results. Experimenter bias can be reduced by conducting a double-blind study: Neither the researcher conducting the study nor the participants know which group they are in.

18. What are the advantages and disadvantages of case studies?

Along with many positive effects of using case studies, there are several disadvantages to consider, including: Case study results can be difficult to replicate. Case studies can be expensive and time-consuming. Researchers can allow their own feelings to influence the case study, known as researcher bias.