Chapter 9

1. Inference to the best explanation:
   Phenomenon Q.
   E provides the best explanation for Q.
   Therefore, it is probable that E is true.

   Enumerative induction:
   X percent of the observed members of group A have property P.
   Therefore, X percent of all members of group A probably have property P.

   Analogical induction:
   Thing A has properties P1, P2, P3 plus the property P4.
   Thing B has properties P1, P2, and P3.
   Therefore, thing B probably has property P4.

2. A standard of internal and external consistency that a theory must meet to be eligible for further consideration.

3. Testability: Whether there is some way to determine if a theory is true.
   Fruitfulness: The number of novel predictions made.
   Scope: The amount of diverse phenomena explained.
   Simplicity: The number of assumptions made.
   Conservatism: How well a theory fits with existing knowledge.

4. With testable theories there is a way to determine whether they are true or false; untestable theories cannot be checked.

5. Four steps to finding the best explanation:
   Step 1. State the Theory and check for consistency.
   Step 2. Assess the Evidence for the theory.
   Step 4. Test the theories with the criteria of adequacy.

6. The best theory is the eligible theory that meets the criteria of adequacy better than any of its competitors.

7. d

8. a, b

9. a, b

10. a

11. Phenomenon: The rise in popularity of a newly elected president.
    (1) The so-called honeymoon effect in which a new president enjoys popularity until he or she is involved in serious or controversial decisions.
12. Phenomenon: Your friend has been skipping class, and you haven’t seen her in days.
(1) She’s in bed with the flu.

13. Phenomenon: Ships, boats, and planes have been disappearing off the coast of Florida for years.
(1) Considering the meteorological and atmospheric conditions of the area, it’s normal for some craft to be lost from time to time.

(1) The lack of awareness and defenses against a new mutated virus.

15. (1) People buy high-ticket merchandise because of subliminal advertising—their minds are being influenced by imperceptible stimuli designed by ad execs. (2) The purchase of high-ticket merchandise. (3) Normal advertising and sales ploys influence people to purchase high-ticket merchandise. (4) The alternative theory is more plausible.

16. (1) In cold fusion research, skepticism skews scientists’ observations. (2) The lack of evidence for cold fusion. (3) Cold fusion does not exist. (4) The alternative theory is more plausible.

17. (1) Eleanor must have a system that enables her to pick winning numbers. (2) Eleanor’s winning the state lottery twice in nine months. (3) Coincidence. (4) The coincidence theory is more plausible.

18. (1) The embezzlement was caused by the divorce of his parents when he was very young. (2) The embezzlement. (3) He embezzled because he needed the money to pay debts. (4) The alternative theory is more plausible.

19. (1) Schoolchildren do poorly in school because of the low or negative expectations of their teachers. (2) Poor performance of school children. (3) Students do poorly because teachers want them to fail. (4) The expectations theory is more plausible.

20. (1) The woman is possessed. (2) The woman’s bizarre behavior, including stigmata (bleeding from the palms). (3) The woman suffers from some form of psychosis, which can manifest itself in many strange symptoms, including bleeding from the skin. (4) The alternative theory is more plausible.