Exercise 1.3 Part I, 1-27

Identify each argument as deductive or inductive.

1. Because triangle A is congruent with triangle B, and triangle A is isosceles, it follows that triangle B is isosceles.
2. The plaque on the leaning tower of Pisa says that Galileo performed experiments there with falling objects. It must be the case that Galileo did indeed perform those experiments there.
3. The rainfall in Seattle has been more than 15 inches every year for the past thirty years. Therefore, the rainfall next year will probably be more than 15 inches.
4. No e-mail messages are eloquent creations. Some love letters are eloquent creations. Therefore, some love letters are not e-mail messages.
5. Amoco, Exxon, and Texaco are all listed on the New York Stock Exchange. It must be the case that all major American oil companies are listed on the New York Stock Exchange.
6. The longer a pendulum is, the longer it takes to swing. Therefore, when the pendulum of a clock is lengthened, the clock slows down.
7. Paying off terrorists in excheange for hostages is not a wise policy, since such action will only lead them to take more hostages in the future.
8. The Matterhorn is higher than Mount Whitney, and Mount Whitney is higher than Mount Rainier. The obvious conclusion is that the Matterhorn is higher than Mount Rainier.
9. Although both front and rear doors were found open after the burglary, there were pry marks around the lock on the rear door and deposits of mud near the threshold. It must be the case that the thief entered through the rear door and left through the front.
10. The Encyclopedia Britannica has an article on symbiosis. The Encyclopedia Americana, like the Britannica, is an excellent reference work. Therefore, the Americana probably also has asn article on symbiosis.
11. Cholesterol is endogenous with humans. Therefore, it is manufactured inside the human body.
12. Either classical culture originated in Greece, or it originated in Egypt. Classical culture did not originate in Egypt. Therefore, classical culture originated in Greece.
13. World-renowned physicist Stephen Hawking says that the condition of the universe at the instant of the Big Bang was more highly ordered than it is today. In view of Hawking’s stature in the scientific community, we should conclude that this description of the universe is correct.
14. If Alexander the Great died from typhoid fever, then he became infected in India. Alexander the Great did die from typhoid fever. Therefore, he became infected in India.
15. Crater Lake, the deepest lake in the United States, was caused by a huge volcano eruption 7700 years ago. Since human beings have lived around the mountain for more than 10,000 years, it is likely that people witnessed that eruption.
16. Each element, such as hydrogen and iron, has a set of gaps –wavelengths that it absorbs rather than radiates. So if those wavelengths are missing from the spectrum, you know that that element is present in the star you are observing.
17. Because the apparent daily movement which is common to both the panets and the fixed stars is seen to travel from the east to the west, but the far slower single movements of the single planets travel in the opposite direction from west to east, it is therefore certain that these movements cannot depend on the common movement of the world but should be assigned to the planets themselves.
18. Reserves of coal in the United States have an ergy equivalent 33 times that of oil and natural gas. On a worldwide basis the multiple is about 10. By shifting to a coal-based economy, we could satisfy our energy requirements for at least a century, probably longer.
19. When the Romans occupied England, coal was burned. Since coal produces quite a bit of soot and sulfur dioxide, there must have been days almost 2000 years ago when the air in the larger towns was badly polluted.
20. Given present growth rates in underdeveloped countries, the limited practice of birth control, and the difficulty of slowing the current growth momentum, it can be said with virtual certainty that none of the people now reading this book will ever live in a world where the population is not growing.
21. The interpretation of the laws is the proper and peculiar province of the courts. A constitution is, in fact, and must be regarded by the judges, as a fundamental law. It therefore belongs to them to ascertain its meaning, as well as the meaning of any particular act proceeding from the legislative body.
22. The Simpson incident had shown me that a dog was kept in the stables, and yet, though someone had been in and had fetched out a horse, he had not barked enough to arouse the two lads in the loft. Obviously the midnight visitor was someone whom the dog knew well.
23. Eternity is simultaneously whole. But time has a before and an after. Therefore time and eternity are not the same thing.
24. Ordinary things that we encounter every day are electrically neutral. Therefore, since negatively charged electrons are a part of everything, positively charged particles must also exist in all matter.