

corresponding conditional. For example, the corresponding conditional of the second argument tested in this section is $[(O \supset \sim T) \cdot (\sim T \supset B)] \supset (O \supset B)$. For any valid argument (such as this one), the corresponding conditional is a tautology. This is easy to see. In any valid argument, there is no line on which the premises are all true and the conclusion false. Thus, in the corresponding conditional, there is no line on which the antecedent is true and the consequent false, so the corresponding conditional is true on every line.

Exercise 6.4

I. Translate the following arguments into symbolic form. Then determine whether each is valid or invalid by constructing a truth table for each.

- ★1. If national elections deteriorate into TV popularity contests, then smooth-talking morons will get elected. Therefore, if national elections do not deteriorate into TV popularity contests, then smooth-talking morons will not get elected.
2. Brazil has a huge foreign debt. Therefore, either Brazil or Argentina has a huge foreign debt.
3. If fossil fuel combustion continues at its present rate, then a greenhouse effect will occur. If a greenhouse effect occurs, then world temperatures will rise. Therefore, if fossil fuel combustion continues at its present rate, then world temperatures will rise.
- ★4. If there are dried-up riverbeds on Mars, then water once flowed on the Martian surface. There are dried-up riverbeds on Mars. Therefore, water once flowed on the Martian surface.
5. If high school graduates are deficient in reading, they will not be able to compete in the modern world. If high school graduates are deficient in writing, they will not be able to compete in the modern world. Therefore, if high school graduates are deficient in reading, then they are deficient in writing.
6. The disparity between rich and poor is increasing. Therefore, political control over economic equality will be achieved only if restructuring the economic system along socialist lines implies that political control over economic equality will be achieved.
- ★7. Einstein won the Nobel Prize either for explaining the photoelectric effect or for the special theory of relativity. But he did win the Nobel Prize for explaining the photoelectric effect. Therefore, Einstein did not win the Nobel Prize for the special theory of relativity.
8. If microchips are made from diamond wafers, then computers will generate less heat. Computers will not generate less heat and microchips will be

made from diamond wafers. Therefore, synthetic diamonds will be used for jewelry.

9. Either the USS *Arizona* or the USS *Missouri* was not sunk in the attack on Pearl Harbor. Therefore, it is not the case that either the USS *Arizona* or the USS *Missouri* was sunk in the attack on Pearl Harbor.
- ★10. If racial quotas are adopted for promoting employees, then qualified employees will be passed over; but if racial quotas are not adopted, then prior discrimination will go unaddressed. Either racial quotas will or will not be adopted for promoting employees. Therefore, either qualified employees will be passed over or prior discrimination will go unaddressed.