

Examples are taken from P. Hurley, *A concise introduction to logic*.

The following arguments are deductive. Determine whether each is valid or invalid. Determine whether each is materially correct (has all premises true) or materially incorrect (has at least one false premise). Finally, determine whether each is sound or unsound.

1. Since *Moby Dick* was written by Shakespeare, and *Moby Dick* is a science fiction novel, it follows that Shakespeare wrote a science fiction novel. (valid; materially incorrect; unsound)
2. Since London is north of Paris and south of Edinburgh, it follows that Paris is south of Edinburgh. (valid; materially correct; sound)
3. If George Washington was beheaded, then George Washington died. George Washington died. Therefore, George Washington was beheaded. (invalid; materially correct; unsound)
4. The longest river in South America is the Amazon, and the Amazon flows through Brazil. Therefore, the longest river in South America flows through Brazil. (valid; materially correct; sound)
5. Since the Spanish-American War occurred before the American Civil War, and the American Civil War occurred after the Korean War, it follows that the Spanish-American War occurred before the Korean War. (invalid; materially incorrect; unsound)
6. The Empire State Building is taller than the Statue of Liberty, and the Statue of Liberty is taller than the Eiffel Tower. Therefore, the Empire State Building is taller than the Eiffel Tower. (valid; materially incorrect; unsound)
7. All leopards with lungs are carnivores. Therefore, all leopards are carnivores. (valid; materially correct; sound) REMARK In this argument one, obvious premise is omitted. That omitted premise is 'All leopards have lungs'. Arguments like this one, in which an obvious premise is not mentioned explicitly, are called *enthymematic* arguments, or just *enthymemes*.)
8. Chicago is a city in Michigan and Michigan is part of the United States. Therefore, Chicago is a city in the United States. (valid; materially incorrect; unsound)
9. If Senator Hillary Clinton represents California, then she represents a western state. Hillary Clinton does not represent a western state. Therefore, she does not represent California. (valid; materially correct; sound)
10. Every province in Canada has exactly one city as its capital. Therefore, since there are thirty provinces in Canada, there are thirty provincial capitals. (valid; materially incorrect; unsound)
11. Since the Department of Defense Building in Washington, D.C., has the shape of a hexagon, it follows that it has seven sides. (invalid; materially incorrect; unsound)

12. Since Winston Churchill was English, and Winston Churchill was a famous statesman, we may conclude that at least one Englishman was a famous statesman. (valid; materially correct; sound)

13. Since some fruits are green, and some fruits are apples, it follows that some fruits are green apples. (invalid; materially correct; unsound)

14. All physicians are individuals who have earned degrees in political science, and some lawyers are physicians. Therefore, some lawyers are persons who have earned degrees in political science. (valid; materially incorrect; unsound)

15. The United States Congress has more members than there are days in the year. Therefore, at least two members of Congress have the same birthday. (valid; materially correct; sound)