

Today is Saturday.

Mississippi became a state before Alabama.

Alabama became a state before Mississippi.

Although today is Thursday, it is also Monday.

I am in Mississippi or I am not in Mississippi.

If today is Monday, then it is not Wednesday.

Today is Thursday, and it is not Thursday.

(1) Amy is upstairs.

(2) Kate is downstairs (and in the same building).

(1) Amy is upstairs.

(2) Kate is downstairs (and in the same building).

(3) Amy is in Mississippi.

(1) Amy is upstairs.

(2) Kate is downstairs (and in the same building).

(3) Amy is in Mississippi.

(4) Kate is in Alabama.

(1) Amy is upstairs.

(2) Kate is downstairs (and in the same building).

(3) Amy is in Mississippi.

(4) Kate is in Alabama.

(5) Kate is at a higher elevation than Amy.

John went to the store after he washed the dishes.

John washed the dishes before he went to the store.

[P₁] If John is in the safe house, then Sarah is in Amsterdam.

[P₂] If Sarah is in Amsterdam, then Kate is on the train.

[C] Therefore, if John is in the safe house, then Kate is on the train.

[P₁] If A, then B.

[P₂] If B, then C.

[C] Therefore, if A, then C.

[P₁] Greg is a human.

[C] Therefore, Greg is a mammal.

[P₁] Kate and Amy are sisters.

[P₂] Kate is alive today.

[C] Therefore, Amy was not alive in 1521.

[P₁] Amy has three plants.

[P₂] Kate has five plants.

[C] Kate has more plants than Amy.

- (1a) Dr. Cook is in her office or Dr. Wilson is in his office.
- (1b) If Dr. Wilson is not in his office, then Dr. Cook is in her office.
- (2a) Dr. Cook is not in her office and Dr. Wilson is not in his office.
- (2b) It is not the case that both Dr. Cook is in her office and Dr. Wilson is in his office.
- (3a) Dr. Cook is not in her office or Dr. Wilson is not in his office.
- (3b) It is not the case that both Dr. Cook is in her office and Dr. Wilson is in his office.

Use this translation scheme to translate into English or into TFL.

- E: The elephant is purple.
- S: It snowed in Miami yesterday.
- T: The trial ended in a hung jury.

1. The elephant is purple, and the trial ended in a hung jury. _____
2. It snowed in Miami yesterday, or the elephant is purple. _____
3. If the trial ended in a hung jury, then the elephant is purple. _____
4. The elephant is not purple if and only if it snowed in Miami yesterday. _____
5. If the elephant is not purple, then the trial ended in a hung jury. _____
6. It is not the case that if the elephant is purple, then the trial ended in a hung jury. _____
7. $(S \vee \neg T)$ _____
8. $(S \leftrightarrow \neg E)$ _____
9. $(E \rightarrow T)$ _____
10. $(\neg T \rightarrow E)$ _____
11. The elephant is purple or both it snowed in Miami yesterday and the trial ended in a hung jury.

12. If either the elephant is purple or it snowed in Miami yesterday, then the trial ended in a hung jury.

13. If the trial ended in a hung jury, then it is not the case that both the elephant is purple and it snowed in Miami yesterday.

14. The elephant is not purple if and only if it is not the case that either the trial ended in a hung jury or it snowed in Miami yesterday.

15. $((E \ \& \ S) \rightarrow T)$ _____

16. $(S \rightarrow (E \vee T))$ _____
