

[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.

17. [P1] Greg is a human.  
 [C] Therefore, Greg is a mammal.

18. [P1] Kate and Amy are sisters.  
 [P2] Kate is alive today.  
 [C] Therefore, Amy was not alive  
 in 1521.

19. [P1] Sarah is reading or she is at  
 work.  
 [P2] Sarah is not at work.  
 [C] Therefore, Sarah is reading.

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

*P*: The book is purple.      *S*: It snowed in Miami.      *T*: The trial ended.

1. The book is purple, and the trial ended. \_\_\_\_\_
2. It snowed in Miami, or the book is purple. \_\_\_\_\_
3. If the trial ended, then the book is purple. \_\_\_\_\_
4. The book is not purple if and only if it snowed in Miami. \_\_\_\_\_
- 5a & b. If the book is not purple, then the trial ended. If it is not the case that the book is purple, then the trial ended. \_\_\_\_\_
6. It is not the case that if the book is purple, then the trial ended. \_\_\_\_\_
7.  $(S \vee \neg T)$  \_\_\_\_\_
8.  $(S \leftrightarrow \neg P)$  \_\_\_\_\_
9.  $(\neg P \ \& \ T)$  \_\_\_\_\_
10.  $\neg(P \ \& \ T)$  \_\_\_\_\_
11. The book is purple or both it snowed in Miami and the trial ended.  
 \_\_\_\_\_
12. If either the book is purple or it snowed in Miami, then the trial ended.  
 \_\_\_\_\_
13. If the trial ended, then it is not the case that both the book is purple and it snowed in Miami.  
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14. The book is not purple if and only if it is not the case that either the trial ended or it snowed in Miami.  
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15.  $((P \ \& \ S) \rightarrow T)$  \_\_\_\_\_  
 \_\_\_\_\_
16.  $(S \rightarrow (P \vee T))$  \_\_\_\_\_  
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