TRANSLATIONS IN PROPOSITIONAL LOGIC - EXERCISES

Translate the following sentences into formulas of propositional logic.

1. The world isn't destroyed only if Tom saves the unicorn.
2. Although Tom doesn't study business he opens up his own bar.
3. Tom dances if he is home alone, but if isn't home alone then he doesn't dance.
4. Tom doesn't learn how to love unless he kidnaps and dances with Dustin.
5. Tom doesn't bite Brad if and only if Brad doesn't lose his wife and estate.
6. If Tom gets to Paris and Emily is alive then Tom defeats the aliens, but if Tom doesn't get to Paris or Emily isn't alive then he doesn't.

Identify the propositional argument form of the following arguments.

1. If Leverkuhn is gifted and makes a deal with the devil, then he becomes a genius. Therefore, Leverkuhn doesn’t become a genius only if he isn’t gifted or doesn’t make a deal with the devil.
2. Jim doesn’t open his own bar unless he studies business and his father helps him. Jim doesn’t study business if he studies philosophy. Therefore, if Jim studies philosophy or his father doesn't help him, he doesn't open his own bar.
3. Tonio suffers if Hans doesn’t love him, but Tonio won’t become a writer unless he suffers. Therefore, Tonio becomes a writer if and only if Hans doesn’t love him.
4. Old Jolyon doesn’t die happily unless he goes to the opera and has dinner with Irene. He doesn’t have dinner with Irene if and only if he doesn’t go the opera. Therefore, if Old Jolyon has dinner with Irene, he dies happily.