

Exercises to 1.2 *Conditional and biconditional*

(1) *Symbolize the following sentences. Also indicate which atomic sentences the propositional letters (p , q , r , ...) symbolize.*

- 1) We'll see you again next year if we don't sell the house and stay in Europe.
- 2) If it is raining or cold, the party will not be in the yard.
- 3) In case the global recession continues, if taxes are not reduced, there will be a stagnation and bank failures.
- 4) Provided that Bob is acquainted with the contract and signs it, if he does not comply with it in the future, he will either pay a fine and his property will be confiscated or he will go to prison.
- 5) Bob will go to the party only if Alice doesn't.
- 6) Alice will stop being angry if and only if you take your words back and apologize to her.
- 7) If you break the law, you will be punished whether you knew you were breaking it or not.
- 8) If the guard is not guilty, he either fired a warning shot or did not shoot the thief.
- 9) If the keys are not in my pants pockets or in my bag, then I either lost them or forgot them at home.
- 10) It is not true that Bob will go to the concert if Alice and Emma go.
- 11) I'll take you to a movie or a restaurant, but not both.
- 12) There will only be mushrooms if the weather is warm and humid.
- 13) Bob will go to the meeting, and if Desmond has told Alice, so will she.
- 14) If Alice needs help and Molly doesn't help her, then Alice won't help Molly if she needs help.
- 15) Emma will go to Athens if Alice goes, and vice versa.
- 16) Bob will go to the party if and only if Alice doesn't.
- 17) If both my brother and my sister go to the party, then I will not go, but if only my brother goes, then I will go.
- 18) If the guard has shot the thief, if he has not fired a warning shot, he is guilty.