

Part A. Analyze each of the following arguments in two stages. (1) First, use the suggested capital letters to abbreviate the simple sentences of the argument. This results in a partial symbolization consisting of capital letters connected by English operator expressions. (2) Next, finish symbolizing the arguments by replacing the English operator expressions by the symbolic connectives. Write the two results side by side for comparison. (3) Optional: In your opinion, is the argument valid or invalid?

	English argument	partial	complete
1.	Robert knows Latin if and only if he doesn't know Greek. He does know Greek. So, Robert doesn't know Latin. (L, G) Argument is: _____	L if and only if not G G So, not L	$L \equiv \sim G$ G $\therefore \sim L$
2.	Beth will go, if James asks her. If Matthew asks her, Beth will go also. If James doesn't ask her, Matthew will. So, Beth will go. (B, J, M) Argument is: _____	_____ _____ _____	_____ _____ _____
3.	The music isn't by Vivaldi unless the style is baroque. If the style is romantic then it is not baroque. So, if the music is by Vivaldi, then it is not romantic. (V, B, R) Argument is: _____	_____ _____ _____	_____ _____ _____
4.	Matthew will have eaten, if Beth cooked. Matthew did not eat unless James ate too. So, James ate only if Beth cooked. (M, B, J) Argument is: _____	_____ _____ _____	_____ _____ _____
5.	Laura will give the lecture unless no one shows up. Luckily, people did show up. So, she did give the lecture. (G, S) Argument is: _____	_____ _____ _____	_____ _____ _____
6.	If the host knows the senator, then the senator will be invited. If the hostess likes the senator, then he will also be invited. But neither does the host know him nor does the hostess like him. So, the senator won't be invited. (K, I, L) Argument is: _____	_____ _____ _____ _____	_____ _____ _____ _____
7.	They won't sell the house only if they can pay the mortgage. But they are selling the house. So, they can't pay the mortgage. (S, P) Argument is: _____	_____ _____ _____	_____ _____ _____
8.	Samantha will not run unless the weather isn't hot. Thus, that she will run while the weather is hot isn't going to happen. (R, H) Argument is: _____	_____ _____	_____ _____

9. This cylinder is square only if it isn't round. But, even if the cylinder is square, it still has to be round. But any fool knows it can't be both round and not round. So, this cylinder can't be square. (S, R) Argument is: _____

10. If the demand for these products goes up, then the price will go up. Also, the demand for these products will go up only if employment goes up. However, the demand hasn't gone up at all. So, either the price or the employment is not going up. (D, P, E) Argument is: _____

11. Some employees must be let go, if the budget is reduced. There won't be a pay increase unless the budget is not frozen. The budget will be either reduced or frozen. So, some employees must be let go, or there won't be a pay increase. (L, R, P, F) Argument is: _____

12. Unless clubs were not led, I can take this trick. I have a good hand, if spades are trump. Either clubs were led or spades are trump. So, either I can take this trick, or I have a good hand. (C, T, G, S) Argument is: _____

13. If the pressure is too low, the engine won't run. And, if the pressure is too high, the engine won't run. So, if the engine runs, the pressure is neither too low nor too high. (L, R, H) Argument is: _____

14. The landlord may evict the tenant only if the tenant has not satisfied the terms of the lease. The tenant has not satisfied the terms of the lease unless the rent is paid. So, if the rent is not paid, the landlord may evict the tenant. (E, S, P) Argument is: _____

15. Provided Albert knows calculus, he knows algebra. But he doesn't know calculus if he doesn't know trigonometry. So, he doesn't know trigonometry unless he doesn't know algebra. (C, A, T) Argument is: _____

16. Joe does not know calculus, but he does know algebra. But, he doesn't know trigonometry without knowing calculus. So, Joe knows algebra, but he doesn't know trigonometry. (C, A, T) Argument is: _____
