

SYMBOLIC LOGIC

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HOD PHILOSOPHY

RKC, MADHUBANI

IV. Use truth tables to determine the validity or invalidity of each of the following argument forms:

QUES. NO. 14. If the weather is warm and the sky is clear, then either we go swimming or we go boating. It is not the case that if the sky is clear, then we go swimming. Therefore, if we do not go boating, then the weather is not warm.

ANS. NO. 14. $\{[(W \cdot C) \supset (S \vee B)] \cdot \sim(C \supset S)\} \supset (\sim B \supset \sim W)$

[(W . C) ⊃ (S ∨ B)]							~ (C ⊃ S)			⊃ (~B ⊃ ~W)				
T	T	T	T	T	T	T	F	F	T	T	F	T	F	
T	T	T	T	T	T	F	F	F	T	T	T	F	F	
T	T	T	T	F	T	T	T	T	F	T	F	T	F	
T	T	T	F	F	F	F	F	T	F	T	T	F	F	
T	F	F	T	T	T	T	F	F	T	T	F	T	F	
T	F	F	T	T	T	F	F	F	T	T	T	F	F	
T	F	F	T	F	T	T	F	F	T	T	F	T	F	
T	F	F	T	F	F	F	F	F	T	T	T	F	F	
F	F	T	T	T	T	T	F	F	T	T	F	T	T	
F	F	T	T	T	T	F	F	F	T	T	T	T	T	
F	F	T	T	F	T	T	T	T	F	T	F	T	T	
F	F	T	T	F	F	F	T	T	F	T	T	T	T	
F	F	F	T	T	T	T	F	F	T	T	F	F	T	
F	F	F	T	T	T	F	F	F	T	T	T	T	T	
F	F	F	T	F	T	T	F	F	T	T	F	F	T	
F	F	F	T	F	F	F	F	F	T	T	T	T	T	
1	7	2	9	3	8	4	12	11	10	14	6	13	5	

Valid

shown by column no. 14

QUES. NO. 15. If the weather is warm and the sky is clear, then either we go swimming or we go boating. It is not the case that if we do not go swimming, then the sky is not clear. Therefore, either the weather is warm or we go boating.

ANS. NO. 15. $\{[(W \cdot C) \supset (S \vee B)] \cdot \sim(\sim W \supset \sim C)\} \supset (W \vee B)$

$\{[(W \cdot C) \supset (S \vee B)] \cdot \sim(\sim W \supset \sim C)\} \supset (W \vee B)$													
T	T	T	T	T	T	T	F	F	F	T	F	T	F
T	T	T	T	T	T	F	F	F	F	T	F	T	T
T	T	T	T	F	T	T	F	F	F	T	F	T	F
T	T	T	F	F	F	F	F	F	F	T	F	T	T
T	F	F	T	T	T	T	F	F	F	T	T	T	F
T	F	F	T	T	T	F	F	F	F	T	T	T	T
T	F	F	T	F	T	T	F	F	F	T	T	T	F
T	F	F	T	F	F	F	F	F	F	T	T	T	T
F	F	T	T	T	T	T	T	T	T	F	F	F	F
F	F	T	T	T	T	F	T	T	T	F	F	T	T
F	F	T	T	F	T	T	T	T	T	F	F	F	F
F	F	T	T	F	F	F	T	T	T	F	F	T	T
F	F	F	T	T	T	T	F	F	T	T	T	T	F
F	F	F	T	T	T	F	F	F	T	T	T	T	T
F	F	F	T	F	T	T	F	F	T	T	T	T	F
F	F	F	T	F	F	F	F	T	T	F	T	T	T
1	7	2	9	3	8	4	12	11	5	10	6	14	13

Invalid

shown by column no. 14

Row no. 9 & 11

Symbolic logic is the method of representing logical expressions through the use of symbols and variables, rather than in ordinary language. This has the benefit of removing the ambiguity that normally accompanies ordinary languages, such as English, and allows easier operation. There are many systems of symbolic logic, such as classical propositional logic, first-order logic and modal logic. Each may have separate symbols, or exclude the use of certain symbols. Symbolic logic differs from traditional logic in its extensive use of symbols similar to those used in mathematics, in its lack of concern with the psychology and epistemology of knowledge, and in its formalism. It is concerned mainly with the analysis of the correctness of logical laws, such as the law of contradiction, that of the hypothetical syllogism, and so on. Symbolic logicians attempt... The Project Gutenberg EBook of Symbolic Logic, by Lewis Carroll. This eBook is for the use of anyone anywhere at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org. Title: Symbolic Logic. Author: Lewis Carroll. Release Date: May 5, 2009 [EBook #28696]. Language: English. Character set encoding: ASCII ***. In logic, a set of symbols is commonly used to express logical representation. The following table lists many common symbols, together with their name, pronunciation, and the related field of mathematics. Additionally, the third column contains an informal definition, the fourth column gives a short example, the fifth and sixth give the Unicode location and name for use in HTML documents. The last column provides the LaTeX symbol. These symbols are sorted by their Unicode value: An Example of. Symbolic Logic With Truth Tables. Brett Berry. Follow. Jun 22, 2017 · 3 min read. We covered the basics of symbolic logic in the last post . Now let's put those skills to use by solving a symbolic logic statement. Last Post. Intro to Truth Tables & Boolean Algebra.