

# Introduction to Logic, P. Suppes - exercises

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## Exercise 5.

$N$  = New York is larger than Chicago

$W$  = New York is north of Washington

$C$  = Chicago is larger than New York

$N = true, W = true, C = false$

Which of the following sentences are true?

- (a)  $N \vee C$  (true)
- (b)  $N \wedge C$  (false)
- (c)  $\neg N \wedge \neg C$  (false)
- (d)  $N \leftrightarrow \neg W \vee C$  (false)
- (e)  $W \vee \neg C \rightarrow N$  (true)
- (f)  $(W \vee N) \rightarrow (W \rightarrow \neg C)$  (true)
- (g)  $(W \leftrightarrow \neg N) \leftrightarrow (N \leftrightarrow C)$  (true)
- (h)  $(W \rightarrow N) \rightarrow [(N \rightarrow \neg C) \rightarrow (\neg C \rightarrow W)]$  (true)