

Week 4

Exercises on truth tables (2)

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26 March 2020

1. Check if the following sentences are tautologies or contradiction. If not, which truth value assignment provides a counterexample?
 - a) $(\varphi \vee \psi) \rightarrow \varphi$;
 - b) $(\varphi \wedge \psi) \rightarrow \neg\varphi$;
 - c) $((\varphi \rightarrow \psi) \leftrightarrow (\neg\varphi \vee \psi)) \rightarrow \varphi$.
2. For all of the previous formulas, adding new connectives, do the following:
 - a) If the formula is a tautology or a contradiction, transform it in a contingent formula;
 - b) If the formula is contingent, transform it in a tautology and a contradiction.