

COMP 410  
Fall 2023

**Solving SAT Instances with Semantic Tableau**

Write out the entire semantic tableau for each one of the following Boolean formulas. Using this tableau, determine if the formula is satisfiable or unsatisfiable. If the formula is satisfiable, provide a satisfying assignment.

1.)

$\neg x$

2.)

$x \wedge \neg y \wedge \neg z$

3.)

$$(x \wedge \neg x) \vee x$$

4.)

$$(x \vee y) \wedge (\neg x \vee \neg y)$$