

## PHIL1012 INTRODUCTION TO LOGIC

### PROBLEM SET 7 (S2 2021)

*Submit your answers to Problem Set 7 via Canvas before 23:59, Wednesday of Week 10.*

1. Determine using a tree whether the following two propositions are equivalent. If they are not equivalent, read off from your tree a model in which one proposition is true and the other is false.

$$\begin{aligned}\forall x(Px \rightarrow Gc) \\ \forall xPx \rightarrow Gc\end{aligned}$$

2. Determine using a tree whether the following argument is valid. If it is not valid, read off a counterexample from your tree.

$$\begin{aligned}\forall y(Fy \rightarrow \neg Gy) \\ Ga \leftrightarrow \exists w \neg Hw \\ \therefore \neg Hb \rightarrow \neg \forall xFx\end{aligned}$$

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