

Discrete Structures and Theory (Spring 2023)

Homework 1

Deadline: 27/01/2023

1. (3 POINTS) Write each of these statements in the form “if p, then q” in English.
 - a) It is sufficient to leave Accra at 6:00AM to get to campus by 8:00AM.
 - b) Willy gets caught whenever he cheats.
 - c) You can access the website only if you pay a subscription fee.
 - d) Getting elected follows from knowing the right people.
 - e) Winds from the south imply a spring thaw.
 - f) Abena will go to Accra unless she missed the bus.
2. (3 POINTS) Construct a truth table for each of these compound propositions:
 - a) $p \oplus p$
 - b) $(p \oplus q) \vee (p \oplus \neg q)$
3. (3 POINTS) Use logical equivalences to show that $[\neg p \wedge (p \vee q)] \rightarrow q$ is a tautology.