CSE 3302/5307 Programming Language Concepts

Homework 10 - Fall 2025

Due Date: Oct. 27, 2025, 9:00PM Central Time

Name:_____ UTA ID:_____

Problem1 - 60%

Write down the principal solutions for the following sets of constraints:

1. $\{X = Int,\ Y = X \to X\}$
2. $\{Int \to Int = X \to Z\}$
3. $\{X \to Y = Y \to Z,\ Z = U \to W\}$
4. $\{Int = Int \to X\}$
5. $\{X = Int \to X\}$
6. $\{\}$

Problem2 - 40%

Proof **Progress Theorem**: If e is closed and well-typed(i.e. $\Sigma; . \vdash e : t$ for some Σ and t), then either e is a value or for any store M such that $\Sigma; . \vdash M$, there exists an expression e' and store M', such that $(M, e) \rightarrow (M', e')$. (Restrict e without sequence, while loop, and error)