Name: _____ CompID: _____

CS 2102 - DMT1 - Fall 2019 — Luther Tychonievich
Administered in class friday september 20, 2019

Quiz 04

problem 1 *Set definition*

Let $A = \{0, 2, 3\}$, $B = \{x^2 \mid (x \in \mathbb{N}) \wedge x^2 < 10\}$, and $C = \mathcal{P}(\{4, 9\})$. Show the full set of members in each of the following sets using curly-brace notation (not set-builder or operator-defined notation):

$B =$ $\{0, 1, 4, 9\}$

$C =$ $\{\{\}, \{4\}, \{9\}, \{4, 9\}\}$

$A \cup B =$ $\{0, 1, 2, 3, 4, 9\}$

$A \cap B =$ $\{0\}$

$A \setminus B =$ $\{2, 3\}$

$B \cup C =$ $\{0, 1, 4, 9, \{\}, \{4\}, \{9\}, \{4, 9\}\}$

$\{x \mid (x \in A) \oplus (x \in B)\} =$ $\{1, 2, 3, 4, 9\}$

$\{x \mid (x \in B) \wedge (\forall y \in A \,.\, x \neq y)\} =$ $\{1, 4, 9\}$

$\{x \mid (x \in B) \wedge (\exists Y \in C \,.\, x \in Y)\} =$ $\{4, 9\}$