CECS 528, In Class Assignment 9, Friday March 27th, 2026, Dr. Ebert

Directions. Read over the problems and decide on who will serve the roles of "Student 1", "Student 2", and "Student 3". Each student will use a separate sheet to write his or her solutions. On the answer sheet, each student should indicate their rol (Student 1, Student 2, or Studdent 3) on the answer sheet.

Problems

Solve the following problems in relation to the Boolean formula $F(x_1, x_2, x_3) = (\overline{x}_1 \wedge \overline{x}_2) \vee (x_2 \wedge \overline{x}_3)$.

Student 1. Provide a satisfying assignment α for F. (5 pts)

Student 2. Draw the parse tree for F and, after labeling each internal node with a y-variable, provide the initial Boolean formula F' that begins the Tseytin transformation and is satisfiability equivalent to F. (5 pts)

Student 3. Provide the satisfying assignment β for F' that extends the satisfying assignment α for F provided by Student 1. (5 pts)

Student 1. Convert the first double-arrow formula of F' to a set of `3SAT` clauses.

Student 2. Convert the second double-arrow formula of F' to a set of `3SAT` clauses.

Student 3. Convert the third double-arrow formula of F' to a set of `3SAT` clauses.