CS581 Spring 2025 Hw6

Tyson Beach

Due Tues. Mar 11, 2025

Email me with questions/concerns.

1. Compute the DFT of the vector (2, 4, 6, 8). Show your work.
2. Use the simplex algorithm as shown in the book and class to solve the following linear programming formulations.
   a. Minimize $-5x_1 + 3x_2$, subject to:
      $x_1 - x_2 <= 1$
      $2x_1 + x_2 <= 2$
      $x_1, x_2 >= 0$

   b. Maximize $5x_1 + 4x_2 + 3x_3$, subject to:
      $2x_1 + 3x_2 + x_3 <= 5$
      $4x_1 + x_2 + 2x_3 <= 11$
      $3x_1 + 4x_2 + 2x_3 <= 8$
      $x_1, x_2, x_3 >= 0$