

1. Problem 6.1 in Ignizio and Cavalier, parts (a) and (b). Also do the following part.
(c) Verify that the weak duality theorem holds for the pair $\mathbf{x} = (5, 3)$ and $\boldsymbol{\pi} = (3, 1)$.

2. Problem 6.3 in Ignizio and Cavalier, part (a) only.

3. Problem 6.7 in Ignizio and Cavalier, parts (a) and (b).

4. Problem 6.8 in Ignizio and Cavalier. Here change the RHS value of b_1 from 20 to 10 and use $\mathbf{x} = (42, 0, 0, 54)$ instead of $\mathbf{x} = (10, 0, 16, 6)$ in answering the question. Also answer the following part.
(b) From your answer to part (a), reconstruct the expression of the (primal) objective function z in terms of the nonbasic variables defined by the optimal solution \mathbf{x} above.