

The optimal relaxed solution for an ILP has $x_1=3.6$ and $x_2=2.9$. If we branch on x_1 , what constraints must be added to the two resulting LP problems.

Solution.

Because x_2 must be an integer value in the optimal solution, the following constraints can be developed.

$$x_2 \leq 2$$

$$x_2 \geq 3$$

In other words, x_2 can be 0, 1, 2, or 3, 4 etc., but cannot be a value between 2 and 3.