Advanced Topics in Operations Research Notes

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$$max\ x_1 + x_2 \tag{1}$$
$$s.t.\ 3x_1 + x_2 \leq 3 \tag{2}$$
$$x_1 \geq 0, x_2 \geq 0 \tag{3}$$

x^* is an extreme point if we cannot find $x_1, x_2 \in S$, such that $x_1 \neq x_2$ and $x^* = \lambda x_1 + (1-\lambda)x_2$ for some $\lambda \in (0, 1)$

For an n-dimensional problem, there are n-many constraints that are active/binding and their coefficients are linearly independent.

Optimal solutions can be found that are not basic feasible solutions when constraints and objective functions lie on the same plane.