The worst-case example for (elementar) simplex method:

$$\max \quad 2^{n-1} x_1 + 2^{n-2} x_2 + \cdots + 2 x_{n-1} + x_n$$

$$\text{s.t.} \quad x_1 \leq 5$$
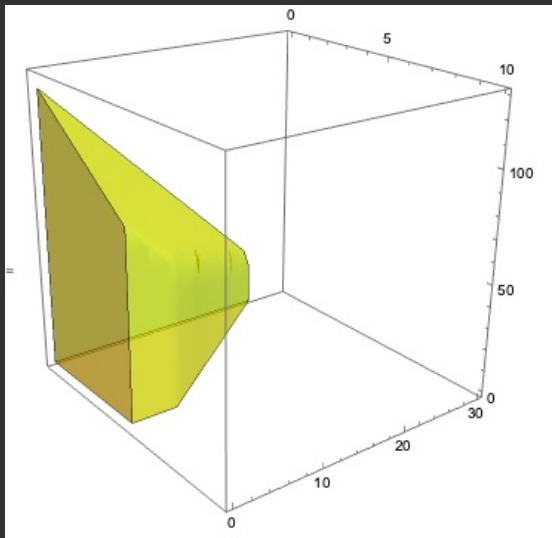
$$4 x_1 + x_2 \leq 25$$

$$8 x_1 + 4 x_2 + x_3 \leq 125$$

$$\vdots$$

$$2^n x_1 + 2^{n-1} x_2 + \cdots + 4 x_{n-1} + x_n \leq 5^3$$

$$x_1, \ldots, x_n \geq 0$$

$\Big\}$ n variables, n constraints

$\rightarrow$ but 2^n extreme points:

$\rightarrow$ optimal solution at $(0, 0, \ldots, 5^3)$