Ex.

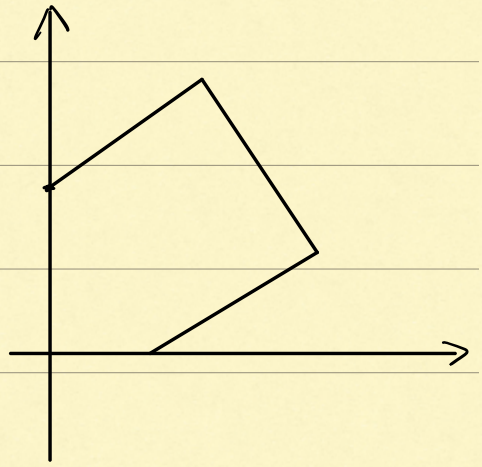
$$\max_{x,y\in\mathbb{R}} \; 2x+3y.$$

$$\text{s.t. } -x+y+s_1 = 3$$

$$x-2y+s_2 = 2$$

$$x+y+s_3 = 7$$

$$x, y, s_1, s_2, s_3 \geq 0.$$



Choose $(x, y, s_1, s_2, s_3) = (0, 0, 3, 2, 7)$ as basic solution. (convenient)

	x	y	s_1	s_2	s_3	
s_1	-1	1	1	0	0	3
s_2	1	-2	0	1	0	2
s_3	1	1	0	0	1	7
$-z$	2	3	0	0	0	0

Pivot on y: remove s_1

	x	y	s_1	s_2	s_3	
y	-1	1	1	0	0	3
s_2	-1	0	2	1	0	8
s_3	2	0	-1	0	1	4
$-z$	5	0	-3	0	0	-9

② Pivot on x: remove s_3

	x	y	s_1	s_2	s_3	
y	0	1	$\frac{1}{2}$	0	$\frac{1}{2}$	5
s_2	0	0	$\frac{3}{2}$	1	$\frac{1}{2}$	10
x	1	0	$-\frac{1}{2}$	0	$\frac{1}{2}$	2
$-z$	0	0	$-\frac{1}{2}$	0	$-\frac{5}{2}$	-19

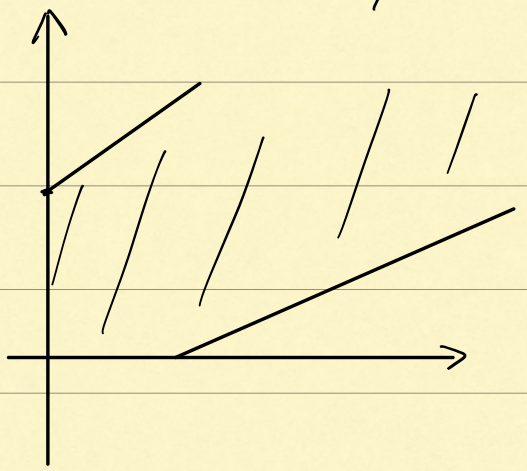
$(2, 5, 0, 10, 0) \Rightarrow z_{max} = 19.$

E2. $\max_{x,y \in \mathbb{R}} \; 2x + 3y.$

$$\text{s.t. } -x + y + s_1 = 3$$

$$x - 2y + s_2 = 2$$

$$x, y, s_1, s_2 \geq 0.$$



No maximum.