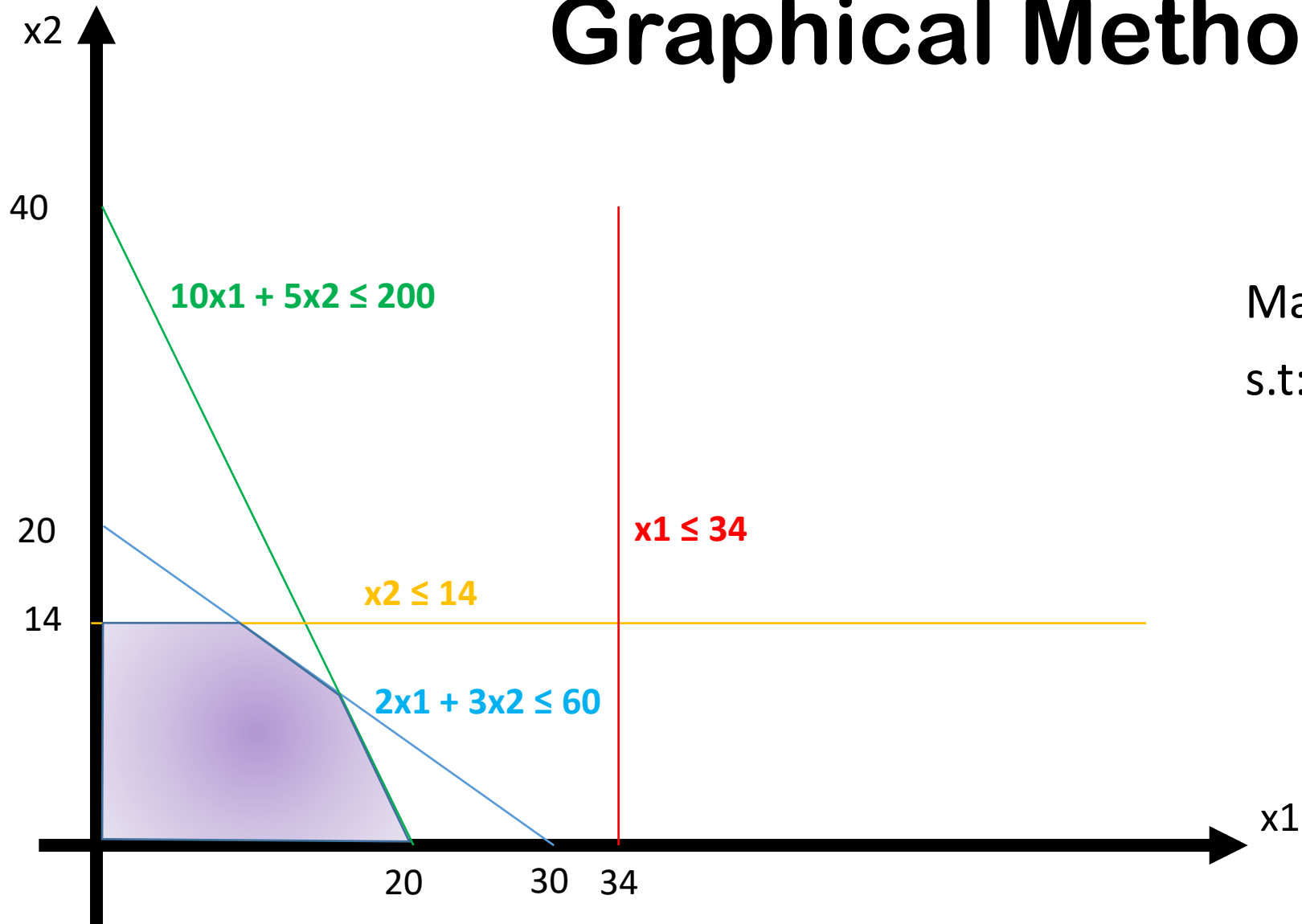


# Graphical Method



$$\text{Max } Z = 1000x_1 + 1200x_2$$

s.t:

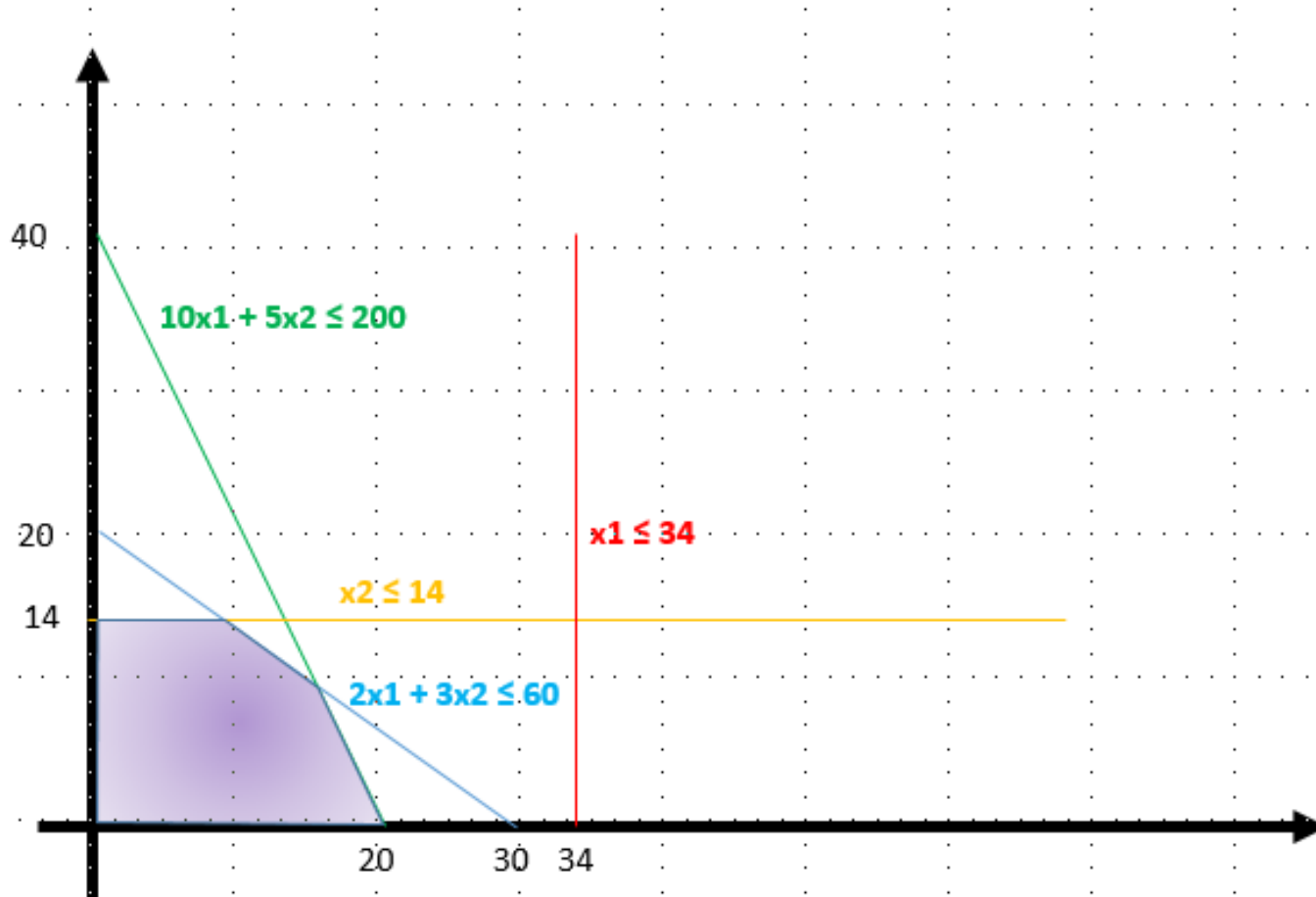
$$10x_1 + 5x_2 \leq 200$$

$$2x_1 + 3x_2 \leq 60$$

$$x_1 \leq 34$$

$$x_2 \leq 14$$

# Graphical Method (with Gridlines)



$$\text{Max } Z = 1000x_1 + 1200x_2$$

s.t:

$$10x_1 + 5x_2 \leq 200$$

$$2x_1 + 3x_2 \leq 60$$

$$x_1 \leq 34$$

$$x_2 \leq 14$$

# Simplex with Table

$$\text{Max } Z = 1000x_1 + 1200x_2 + 0S_1 + 0S_2 + 0S_3 + 0S_4$$

s.t:

$$10x_1 + 5x_2 + S_1 = 200$$

$$2x_1 + 3x_2 + S_2 = 60$$

$$x_1 + S_3 = 34$$

$$x_2 + S_4 = 14$$

Basic	Z	x1	x2	S1	S2	S3	S4	Right
Z0	1	-1000	-1200	0	0	0	0	0
S1	0	10	5	1	0	0	0	200
S2	0	2	3	0	1	0	0	60
S3	0	1	0	0	0	1	0	34
S4	0	0	1	0	0	0	1	14

Pivot

Min is 14

Basic	Z	x1	x2	S1	S2	S3	S4	Right	
Z0	1	-1000	0	0	0	0	1200	16800	
S1	0	10	0	1	0	0	-5	130	13
S2	0	2	0	0	1	0	-3	18	9
S3	0	1	0	0	0	1	0	34	34
x2	0	0	1	0	0	0	1	14	$+\infty$

Pivot

Min is 9

Basic	Z	x1	x2	S1	S2	S3	S4	Right	
Z0	1	0	0	0	500	0	-300	25800	
S1	0	0	0	1	-5	0	10	40	4
x1	0	1	0	0	1/2	0	-3/2	9	-13.5
S3	0	0	0	0	-1/2	0	3/2	25	37.5
x2	0	0	1	0	0	0	1	14	14

Pivot

Min is 4

Basic	Z	x1	x2	S1	S2	S3	S4	Right
Z0	1	0	0	30	350	0	0	27000
S4	0	0	0	0.1	-0.5	0	1	4
x2	0	1	0	3/20	-1/4	0	0	15
S3	0	0	0	-3/20	1/4	0	0	19
x1	0	0	1	-0.1	1/2	0	0	10

✓ done

Solution = (x1, x2, S1, S2, S3, S4) = (10, 15, 0, 0, 19, 4)

Z = 27000