

Tableau I

Basic variable	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}	x_{18}	x_{19}	x_{20}
x_{11}	15	5	11	16	10	10	12	8	7	6	1	0	0	0	0	0	0	0	0	0
x_{12}	0	0	20	0	0	0	40	0	0	0	0	1	0	0	0	0	0	0	0	0
x_{13}	20	30	45	40	15	16	46	40	37	35	0	0	1	0	0	0	0	0	0	0
x_{14}	5	5	15	32	2	3	20	10	8	6	0	0	0	1	0	0	0	0	0	0
x_{15}	0	0	15	0	0	0	35	0	0	0	0	0	0	0	1	0	0	0	0	0
x_{16}	7	11	20	13	5	4	22	20	14	12	0	0	0	0	0	1	0	0	0	0
x_{17}	0	0	10	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0
x_{18}	0	0	20	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0
x_{19}	0	40	40	0	0	0	35	40	20	20	0	0	0	0	0	0	0	0	0	0
$-f$	-55	-125	-30	-45	-65	-60	-20	-23	-50	-100	0	0	0	0	0	0	0	0	0	0

↑ most negative

row 1 $\rightarrow 5/18,750 = 1/3750 \approx 0.00026$ * smallest

row 2 $\rightarrow \infty = 0$ (X)

row 3 $\rightarrow 30/21,2500 = 3/2125 = 0.014117647$

row 4 $\rightarrow 5/16,000 = 1/3200 = 0.0003125$

row 5 $\rightarrow \infty = 0$ (X)

row 6 $\rightarrow 11/15,000 = 0.00073$

row 7 $\rightarrow \infty = 0$ (X)

row 8 $\rightarrow \infty = 0$ (X)

row 9 $\rightarrow 20/9000 = 1/450 = 0.0022$

Scratch work for Tableau Iteration 2

$$\text{row}_1 \rightarrow \begin{matrix} 3 & 1 & \frac{11}{5} & \frac{16}{5} & 2 & 2 & \frac{6}{5} & \frac{8}{5} & \frac{7}{5} & \frac{6}{5} & \frac{1}{5} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3750 \end{matrix}$$

$$\text{row}_2 \rightarrow \begin{matrix} 0 & 0 & 20 & 0 & 0 & 0 & 40 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2000 \end{matrix}$$

$$\rightarrow 0(\dots)$$

$$\begin{matrix} 0 & 0 & 20 & 0 & 0 & 0 & 40 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2000 \end{matrix}$$

$$\text{row}_3 \rightarrow \begin{matrix} 20 & 30 & 45 & 40 & 15 & 16 & 46 & 40 & 37 & 35 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 21250 \end{matrix}$$

$$\rightarrow 30 \left(\begin{matrix} 3 & 1 & \frac{11}{5} & \frac{16}{5} & 2 & 2 & \frac{6}{5} & \frac{8}{5} & \frac{7}{5} & \frac{6}{5} & \frac{1}{5} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3750 \end{matrix} \right)$$

$$\begin{matrix} \downarrow & \downarrow \\ -70 & 0 & -21 & -56 & -45 & -44 & -8 & -5 & -1 & -6 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -91250 \end{matrix}$$

$$\text{row}_4 \rightarrow \begin{matrix} 5 & 5 & 15 & 32 & 2 & 3 & 20 & 10 & 8 & 6 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 16000 \end{matrix}$$

$$\rightarrow 5 \left(\begin{matrix} 3 & 1 & \frac{11}{5} & \frac{16}{5} & 2 & 2 & \frac{6}{5} & \frac{8}{5} & \frac{7}{5} & \frac{6}{5} & \frac{1}{5} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3750 \end{matrix} \right)$$

$$\begin{matrix} \downarrow & \downarrow \\ -10 & 0 & 4 & 16 & -8 & -7 & 14 & 2 & 1 & 0 & -1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -2750 \end{matrix}$$

row 5 = row 5

$$\text{row}_6 \rightarrow \begin{matrix} 7 & 11 & 20 & 13 & 5 & 4 & 22 & 20 & 14 & 12 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 15000 \end{matrix}$$

$$\rightarrow 11 \left(\begin{matrix} 3 & 1 & \frac{11}{5} & \frac{16}{5} & 2 & 2 & \frac{6}{5} & \frac{8}{5} & \frac{7}{5} & \frac{6}{5} & \frac{1}{5} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 3750 \end{matrix} \right)$$

$$\begin{matrix} \downarrow & \downarrow \\ -26 & 0 & \frac{99}{5} & -\frac{111}{5} & -17 & -18 & \frac{44}{5} & \frac{12}{5} & -\frac{7}{5} & -\frac{6}{5} & -\frac{11}{5} & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & -26250 \end{matrix}$$

row 7 = row 7 row 8 = row 8

~~row 9~~

Scratch work (cont.)

row 9

[illegible]

5

-57 -55 -125 -30 -45 -65 -60 -20 -23 -50 -100 0000000000 1 0
+125(3 1 11/8 16/5 2 2 12/5 8/5 7/5 6/5 1/5 0000000000 3750

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
320 0 245 355 185 190 280 931/3 125 50 -25 0 0 0 0 0 0 0 1 468,750

Tableau 2

[illegible]