Assignment-2

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		z	x	y	s_1	s_2	s_3	
		1	-3	-2	0	0	0	0
	s_1	0	2	1	1	0	0	18
	s_2	0	2	3	0	1	0	42
$*$	s_3	0	3	1	0	0	1	24

		z	x	y	s_1	s_2	s_3	
		1	0	$-2+1=-1$	0	0	$0+1=1$	$0+24=24$
$*$	s_1	0	0	$1-1\times\frac{2}{3}=\frac{1}{3}$	1	0	$0-1\times\frac{2}{3}=-\frac{2}{3}$	$18-24\times\frac{2}{3}=2$
	s_2	0	0	$3-1\times\frac{2}{3}=\frac{7}{3}$	0	1	$0-1\times\frac{2}{3}=-\frac{2}{3}$	$42-24\times\frac{2}{3}=26$
	x	0	3	1	0	0	1	24

		z	x	y	s_1	s_2	s_3	
		1	0	0	$0+1\times3=3$	0	$1+(-\frac{2}{3}\times3)=-1$	$24+2\times3=30$
	y	0	0	$\frac{1}{3}$	1	0	$-\frac{2}{3}$	2
$*$	s_2	0	0	0	$0-1\times7=-7$	1	$-\frac{2}{3}-(-\frac{2}{3})\times7=4$	$26-2\times7=12$
	x	0	3	0	$0-1\times3=-3$	0	$1-(-\frac{2}{3})\times3=3$	$24-2\times3=18$

	z	x	y	s_1	s_2	s_3	
	1	0	0	$3+(-4)\times\frac{1}{4}=2$	$0+1\times\frac{1}{4}=\frac{1}{4}$	0	$30+12\times\frac{1}{4}=33$
y	0	0	$\frac{1}{3}$	$1+(-7)\times\frac{1}{6}=-\frac{1}{6}$	$0+1\times\frac{1}{6}=\frac{1}{6}$	0	$2+12\times\frac{1}{6}=4$
s_3	0	0	0	-7	1	4	12
x	0	3	0	$-3-(-7)\times\frac{3}{4}=\frac{9}{4}$	$0-1\times\frac{3}{4}=-\frac{3}{4}$	$3-4\times\frac{3}{4}=0$	$18-12\times\frac{3}{4}=9$

$$\begin{pmatrix} 0 & \frac{1}{3} & 0 \\ 0 & 0 & 4 \\ 3 & 0 & 0 \end{pmatrix} \begin{pmatrix} x \\ y \\ s_3 \end{pmatrix} = \begin{pmatrix} 4 \\ 12 \\ 9 \end{pmatrix}$$

$$\begin{pmatrix} x \\ y \\ s_3 \end{pmatrix} = \begin{pmatrix} 3 \\ 12 \\ 3 \end{pmatrix}$$

$$\therefore \quad x = 3,\ y = 12,\ \max(3x + 2y) = 33$$

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