Initial Dictionary

x_8	37.0	$-8.00x_1$	$-8.00x_2$	$+5.00x_3$	$+7.00x_4$	$+10.00x_5$	$+8.00x_6$	$-4.00x_7$
x_9	40.0	$-5.00x_1$	$-6.00x_2$	$-5.00x_3$	$-10.00x_4$	$+2.00x_5$	$+2.00x_6$	
x_{10}	-21.0	$+9.00x_1$	$+9.00x_2$	$-3.00x_3$	$-2.00x_4$	$-5.00x_5$	$+3.00x_6$	$+1.00x_7$
x_{11}	0.0	$+6.00x_1$	$-6.00x_2$	$-8.00x_3$	$+2.00x_4$	$+4.00x_5$	$+8.00x_6$	
x_{12}	-8.0	$+9.00x_1$	$-1.00x_2$	$+4.00x_3$	$-4.00x_4$		$-6.00x_6$	$+10.00x_7$
x_{13}	52.0	$+7.00x_1$	$-9.00x_2$	$+5.00x_3$	$-8.00x_4$	$-4.00x_5$	$-8.00x_6$	$-9.00x_7$
z	0.0	$+4.00x_1$	$-1.00x_2$		$+5.00x_4$	$+1.00x_5$	$-5.00x_6$	$+5.00x_7$

0.1 Initialization Phase: Dual Problem Solving

New Objective in primal was changed to :

$$\max \sum_{j=1}^{7} -x_j$$

Primal variable x_j corresponds to dual variable y_j for $j = 1, \ldots, 13$ Dual Dictionary (with objective changed is):

y_1	1.0	$+8.00y_8$	$+5.00y_9$	$-9.00y_{10}$	$-6.00y_{11}$	$-9.00y_{12}$	$-7.00y_{13}$
y_2	1.0	$+8.00y_8$	$+6.00y_9$	$-9.00y_{10}$	$+6.00y_{11}$	$+1.00y_{12}$	$+9.00y_{13}$
y_3	1.0	$-5.00y_8$	$+5.00y_9$	$+3.00y_{10}$	$+8.00y_{11}$	$-4.00y_{12}$	$-5.00y_{13}$
y_4	1.0	$-7.00y_8$	$+10.00y_9$	$+2.00y_{10}$	$-2.00y_{11}$	$+4.00y_{12}$	$+8.00y_{13}$
y_5	1.0	$-10.00y_8$	$-2.00y_9$	$+5.00y_{10}$	$-4.00y_{11}$		$+4.00y_{13}$
y_6	1.0	$-8.00y_8$	$-2.00y_9$	$-3.00y_{10}$	$-8.00y_{11}$	$+6.00y_{12}$	$+8.00y_{13}$
y_7	1.0	$+4.00y_8$		$-1.00y_{10}$		$-10.00y_{12}$	$+9.00y_{13}$
z	-0	$-37.00y_8$	$-40.00y_9$	$+21.00y_{10}$		$+8.00y_{12}$	$-52.00y_{13}$

Initialization succeeded in finding final dual dictionary with 2 pivots

y_{10}	0.111111111111	$+0.89y_8$	$+0.56y_9$	$-0.11y_1$	$-0.67y_{11}$	$-1.00y_{12}$	$-0.78y_{13}$
y_2	0.0		$+1.00y_9$	$+1.00y_1$	$+12.00y_{11}$	$+10.00y_{12}$	$+16.00y_{13}$
y_3	1.33333333333	$-2.33y_8$	$+6.67y_9$	$-0.33y_1$	$+6.00y_{11}$	$-7.00y_{12}$	$-7.33y_{13}$
y_4	1.22222222222	$-5.22y_8$	$+11.11y_9$	$-0.22y_1$	$-3.33y_{11}$	$+2.00y_{12}$	$+6.44y_{13}$
y_5	1.55555555556	$-5.56y_8$	$+0.78y_9$	$-0.56y_1$	$-7.33y_{11}$	$-5.00y_{12}$	$+0.11y_{13}$
y_6	0.666666666667	$-10.67y_8$	$-3.67y_9$	$+0.33y_1$	$-6.00y_{11}$	$+9.00y_{12}$	$+10.33y_{13}$
y_7	0.888888888889	$+3.11y_8$	$-0.56y_9$	$+0.11y_1$	$+0.67y_{11}$	$-9.00y_{12}$	$+9.78y_{13}$
z	2.33333333333	$-18.33y_8$	$-28.33y_9$	$-2.33y_1$	$-14.00y_{11}$	$-13.00y_{12}$	$-68.33y_{13}$

Primal Dictionary is:

x_8	18.3333333333	$-0.89x_{10}$		$+2.33x_3$	$+5.22x_4$	$+5.56x_5$	$+10.67x_6$	$-3.11x_7$
x_9	28.3333333333	$-0.56x_{10}$	$-1.00x_2$	$-6.67x_3$	$-11.11x_4$	$-0.78x_5$	$+3.67x_6$	$+0.56x_7$
x_1	2.33333333333	$+0.11x_{10}$	$-1.00x_2$	$+0.33x_3$	$+0.22x_4$	$+0.56x_5$	$-0.33x_6$	$-0.11x_7$
x_{11}	14.0	$+0.67x_{10}$	$-12.00x_2$	$-6.00x_3$	$+3.33x_4$	$+7.33x_5$	$+6.00x_6$	$-0.67x_7$
x_{12}	13.0	$+1.00x_{10}$	$-10.00x_2$	$+7.00x_3$	$-2.00x_4$	$+5.00x_5$	$-9.00x_6$	$+9.00x_7$
x_{13}	68.3333333333	$+0.78x_{10}$	$-16.00x_2$	$+7.33x_3$	$-6.44x_4$	$-0.11x_5$	$-10.33x_6$	$-9.78x_7$
z	-2.33333333333	$-0.11x_{10}$		$-1.33x_3$	$-1.22x_4$	$-1.56x_5$	$-0.67x_6$	$-0.89x_7$

Primal Dictionary with original objective is:

x_8	18.3333333333	$-0.89x_{10}$		$+2.33x_3$	$+5.22x_4$	$+5.56x_5$	$+10.67x_6$ $-3.11x_7$
x_9	28.3333333333	$-0.56x_{10}$	$-1.00x_2$	$-6.67x_3$	$-11.11x_4$	$-0.78x_5$	$+3.67x_6$ $+0.56x_7$
x_1	2.33333333333	$+0.11x_{10}$	$-1.00x_2$	$+0.33x_3$	$+0.22x_4$	$+0.56x_5$	$-0.33x_6$ $-0.11x_7$
x_{11}	14.0	$+0.67x_{10}$	$-12.00x_2$	$-6.00x_3$	$+3.33x_4$	$+7.33x_5$	$+6.00x_6$ $-0.67x_7$
x_{12}	13.0	$+1.00x_{10}$	$-10.00x_2$	$+7.00x_3$	$-2.00x_4$	$+5.00x_5$	$-9.00x_6$ $+9.00x_7$
x_{13}	68.3333333333	$+0.78x_{10}$	$-16.00x_2$	$+7.33x_3$	$-6.44x_4$	$-0.11x_5$	$-10.33x_6$ $-9.78x_7$
z	9.33333333333	$+0.44x_{10}$	$-5.00x_2$	$+1.33x_3$	$+5.89x_4$	$+3.22x_5$	$-6.33x_6$ $+4.56x_7$

x_3 enters and x_{11} leaves

x_8	23.7777777778	$-0.63x_{10}$	$-4.67x_2$	$-0.39x_{11}$	$+6.52x_4$	$+8.41x_5$	$+13.00x_6$ $-3.37x_7$
x_9	12.7777777778	$-1.30x_{10}$	$+12.33x_2$	$+1.11x_{11}$	$-14.81x_4$	$-8.93x_5$	$-3.00x_6$ $+1.30x_7$
x_1	3.11111111111	$+0.15x_{10}$	$-1.67x_2$	$-0.06x_{11}$	$+0.41x_4$	$+0.96x_5$	$-0.15x_7$
x_3	2.33333333333	$+0.11x_{10}$	$-2.00x_2$	$-0.17x_{11}$	$+0.56x_4$	$+1.22x_5$	$+1.00x_6$ $-0.11x_7$
x_{12}	29.3333333333	$+1.78x_{10}$	$-24.00x_2$	$-1.17x_{11}$	$+1.89x_4$	$+13.56x_5$	$-2.00x_6$ $+8.22x_7$
x_{13}	85.4444444444	$+1.59x_{10}$	$-30.67x_2$	$-1.22x_{11}$	$-2.37x_4$	$+8.85x_5$	$-3.00x_6$ $-10.59x_7$
z	12.4444444444	$+0.59x_{10}$	$-7.67x_2$	$-0.22x_{11}$	$+6.63x_4$	$+4.85x_5$	$-5.00x_6$ $+4.41x_7$

x_4 enters and x_9 leaves

x_8	29.4	$-1.20x_{10}$	$+0.76x_2$	$+0.10x_{11}$	$-0.44x_9$	$+4.48x_5$	$+11.68x_6$ $-2.80x_7$
x_4	0.8625	$-0.09x_{10}$	$+0.83x_2$	$+0.08x_{11}$	$-0.07x_9$	$-0.60x_5$	$-0.20x_6$ $+0.09x_7$
x_1	3.4625	$+0.11x_{10}$	$-1.33x_2$	$-0.02x_{11}$	$-0.03x_9$	$+0.72x_5$	$-0.08x_6$ $-0.11x_7$
x_3	2.8125	$+0.06x_{10}$	$-1.54x_2$	$-0.12x_{11}$	$-0.04x_9$	$+0.89x_5$	$+0.89x_6$ $-0.06x_7$
x_{12}	30.9625	$+1.61x_{10}$	$-22.43x_2$	$-1.02x_{11}$	$-0.13x_9$	$+12.42x_5$	$-2.38x_6$ $+8.39x_7$
x_{13}	83.4	$+1.80x_{10}$	$-32.64x_2$	$-1.40x_{11}$	$+0.16x_9$	$+10.28x_5$	$-2.52x_6$ $-10.80x_7$
z	18.1625	$+0.01x_{10}$	$-2.15x_2$	$+0.28x_{11}$	$-0.45x_9$	$+0.86x_5$	$-6.34x_6$ $+4.99x_7$

x_5 enters and x_4 leaves

x_8	35.8132780083	$-1.85x_{10}$	$+6.95x_2$	$+0.66x_{11}$	$-0.94x_9$	$-7.44x_4$	$+10.17x_6$ $-2.15x_7$
x_5	1.43153526971	$-0.15x_{10}$	$+1.38x_2$	$+0.12x_{11}$	$-0.11x_9$	$-1.66x_4$	$-0.34x_6$ $+0.15x_7$
x_1	4.48962655602	$+0.01x_{10}$	$-0.34x_2$	$+0.06x_{11}$	$-0.11x_9$	$-1.19x_4$	$-0.32x_6$ $-0.01x_7$
x_3	4.08298755187	$-0.07x_{10}$	$-0.31x_2$	$-0.01x_{11}$	$-0.14x_9$	$-1.47x_4$	$+0.59x_6$ $+0.07x_7$
x_{12}	48.7385892116	$-0.19x_{10}$	$-5.27x_2$	$+0.52x_{11}$	$-1.52x_9$	$-20.61x_4$	$-6.56x_6$ $+10.19x_7$
x_{13}	98.1161825726	$+0.31x_{10}$	$-18.44x_2$	$-0.12x_{11}$	$-0.99x_9$	$-17.06x_4$	$-5.98x_6$ $-9.31x_7$
z	19.3900414938	$-0.11x_{10}$	$-0.96x_2$	$+0.38x_{11}$	$-0.54x_9$	$-1.42x_4$	$-6.63x_6$ $+5.11x_7$

x_7 enters and x_{13} leaves

x_8	13.1542576906	$-1.92x_{10}$	$+11.21x_2$	$+0.69x_{11}$	$-0.71x_9$	$-3.50x_4$	$+11.55x_6$	$+0.23x_{13}$
x_5	2.96255015604	$-0.14x_{10}$	$+1.09x_2$	$+0.12x_{11}$	$-0.13x_9$	$-1.93x_4$	$-0.43x_6$	$-0.02x_{13}$
x_1	4.40213999108	$+0.01x_{10}$	$-0.32x_2$	$+0.06x_{11}$	$-0.11x_9$	$-1.18x_4$	$-0.32x_6$	$+0.00x_{13}$
x_3	4.78288007133	$-0.06x_{10}$	$-0.44x_2$	$-0.02x_{11}$	$-0.14x_9$	$-1.59x_4$	$+0.55x_6$	$-0.01x_{13}$
x_{12}	156.17209095	$+0.15x_{10}$	$-25.46x_2$	$+0.39x_{11}$	$-2.60x_9$	$-39.29x_4$	$-13.10x_6$	$-1.09x_{13}$
x_7	10.5421310745	$+0.03x_{10}$	$-1.98x_2$	$-0.01x_{11}$	$-0.11x_9$	$-1.83x_4$	$-0.64x_6$	$-0.11x_{13}$
z	73.2817654926	$+0.06x_{10}$	$-11.09x_2$	$+0.32x_{11}$	$-1.09x_9$	$-10.79x_4$	$-9.91x_6$	$-0.55x_{13}$

x_{10} enters and x_8 leaves

x_{10}	6.84570765661	$-0.52x_8$	$+5.83x_2$	$+0.36x_{11}$	$-0.37x_9$	$-1.82x_4$	$+6.01x_6$	$+0.12x_{13}$
x_5	2.00116009281	$+0.07x_8$	$+0.27x_2$	$+0.07x_{11}$	$-0.08x_9$	$-1.67x_4$	$-1.27x_6$	$-0.03x_{13}$
x_1	4.45707656613	$-0.00x_8$	$-0.27x_2$	$+0.07x_{11}$	$-0.11x_9$	$-1.19x_4$	$-0.27x_6$	$+0.00x_{13}$
x_3	4.343387471	$+0.03x_8$	$-0.82x_2$	$-0.04x_{11}$	$-0.12x_9$	$-1.48x_4$	$+0.16x_6$	$-0.01x_{13}$
x_{12}	157.167053364	$-0.08x_8$	$-24.61x_2$	$+0.44x_{11}$	$-2.66x_9$	$-39.56x_4$	$-12.22x_6$	$-1.08x_{13}$
x_7	10.7679814385	$-0.02x_8$	$-1.79x_2$	$-0.00x_{11}$	$-0.12x_9$	$-1.89x_4$	$-0.44x_6$	$-0.10x_{13}$
z	73.6693735499	$-0.03x_8$	$-10.76x_2$	$+0.34x_{11}$	$-1.11x_9$	$-10.90x_4$	$-9.57x_6$	$-0.54x_{13}$

x_{11} enters and x_3 leaves

x_{10}	47.3181818182	$-0.21x_8$	$-1.78x_2$	$-9.32x_3$	$-1.49x_9$	$-15.59x_4$	$+7.51x_6$	$-0.02x_{13}$
x_5	10.2272727273	$+0.14x_8$	$-1.27x_2$	$-1.89x_3$	$-0.30x_9$	$-4.47x_4$	$-0.97x_6$	$-0.06x_{13}$
x_1	12.0909090909	$+0.05x_8$	$-1.71x_2$	$-1.76x_3$	$-0.32x_9$	$-3.79x_4$	$+0.01x_6$	$-0.02x_{13}$
x_{11}	113.454545455	$+0.87x_8$	$-21.35x_2$	$-26.12x_3$	$-3.14x_9$	$-38.61x_4$	$+4.19x_6$	$-0.39x_{13}$
x_{12}	207.181818182	$+0.31x_8$	$-34.02x_2$	$-11.52x_3$	$-4.04x_9$	$-56.58x_4$	$-10.38x_6$	$-1.25x_{13}$
x_7	10.6363636364	$-0.02x_8$	$-1.76x_2$	$+0.03x_3$	$-0.12x_9$	$-1.85x_4$	$-0.45x_6$	$-0.10x_{13}$
z	111.772727273	$+0.26x_8$	$-17.93x_2$	$-8.77x_3$	$-2.16x_9$	$-23.86x_4$	$-8.16x_6$	$-0.67x_{13}$

x_8 enters and x_{10} leaves

x_8	226.304347826	$-4.78x_{10}$	$-8.52x_2$	$-44.57x_3$	$-7.13x_9$	$-74.57x_4$	$+35.91x_6$	$-0.09x_{13}$
x_5	41.0869565217	$-0.65x_{10}$	$-2.43x_2$	$-7.97x_3$	$-1.28x_9$	$-14.64x_4$	$+3.93x_6$	$-0.07x_{13}$
x_1	24.4347826087	$-0.26x_{10}$	$-2.17x_2$	$-4.19x_3$	$-0.71x_9$	$-7.86x_4$	$+1.97x_6$	$-0.03x_{13}$
x_{11}	310.956521739	$-4.17x_{10}$	$-28.78x_2$	$-65.01x_3$	$-9.36x_9$	$-103.68x_4$	$+35.54x_6$	$-0.46x_{13}$
x_{12}	277.130434783	$-1.48x_{10}$	$-36.65x_2$	$-25.29x_3$	$-6.25x_9$	$-79.62x_4$	$+0.72x_6$	$-1.28x_{13}$
x_7	6.52173913043	$+0.09x_{10}$	$-1.61x_2$	$+0.84x_3$	$+0.01x_9$	$-0.49x_4$	$-1.10x_6$	$-0.10x_{13}$
z	171.434782609	$-1.26x_{10}$	$-20.17x_2$	$-20.52x_3$	$-4.04x_9$	$-43.52x_4$	$+1.30x_6$	$-0.70x_{13}$

x_6 enters and x_7 leaves

x_8	438.947368421	$-1.95x_{10}$	$-60.97x_2$	$-17.16x_3$	$-6.66x_9$	$-90.63x_4$	$-32.61x_7$ $-3.39x_{13}$
x_5	64.3421052632	$-0.34x_{10}$	$-8.17x_2$	$-4.97x_3$	$-1.22x_9$	$-16.39x_4$	$-3.57x_7$ $-0.43x_{13}$
x_1	36.1052631579	$-0.11x_{10}$	$-5.05x_2$	$-2.68x_3$	$-0.68x_9$	$-8.74x_4$	$-1.79x_7$ $-0.21x_{13}$
x_{11}	521.368421053	$-1.37x_{10}$	$-80.68x_2$	$-37.89x_3$	$-8.89x_9$	$-119.58x_4$	$-32.26x_7$ $-3.74x_{13}$
x_{12}	281.421052632	$-1.42x_{10}$	$-37.71x_2$	$-24.74x_3$	$-6.24x_9$	$-79.95x_4$	$-0.66x_7$ $-1.34x_{13}$
x_6	5.92105263158	$+0.08x_{10}$	$-1.46x_2$	$+0.76x_3$	$+0.01x_9$	$-0.45x_4$	$-0.91x_7$ $-0.09x_{13}$
z	179.157894737	$-1.16x_{10}$	$-22.08x_2$	$-19.53x_3$	$-4.03x_9$	$-44.11x_4$	$-1.18x_7$ $-0.82x_{13}$

Final Dictionary Final dictionary after first LP relaxation solve:

x_8	438.947368421	$-1.95x_{10}$	$-60.97x_2$	$-17.16x_3$	$-6.66x_9$	$-90.63x_4$	$-32.61x_7$ $-3.39x_{13}$
x_5	64.3421052632	$-0.34x_{10}$	$-8.17x_2$	$-4.97x_3$	$-1.22x_9$	$-16.39x_4$	$-3.57x_7$ $-0.43x_{13}$
x_1	36.1052631579	$-0.11x_{10}$	$-5.05x_2$	$-2.68x_3$	$-0.68x_9$	$-8.74x_4$	$-1.79x_7$ $-0.21x_{13}$
x_{11}	521.368421053	$-1.37x_{10}$	$-80.68x_2$	$-37.89x_3$	$-8.89x_9$	$-119.58x_4$	$-32.26x_7$ $-3.74x_{13}$
x_{12}	281.421052632	$-1.42x_{10}$	$-37.71x_2$	$-24.74x_3$	$-6.24x_9$	$-79.95x_4$	$-0.66x_7$ $-1.34x_{13}$
x_6	5.92105263158	$+0.08x_{10}$	$-1.46x_2$	$+0.76x_3$	$+0.01x_9$	$-0.45x_4$	$-0.91x_7$ $-0.09x_{13}$
z	179.157894737	$-1.16x_{10}$	$-22.08x_2$	$-19.53x_3$	$-4.03x_9$	$-44.11x_4$	$-1.18x_7$ $-0.82x_{13}$

After cutting plane is added

x_8	438.947368421	$-1.95x_{10}$	$-60.97x_2$	$-17.16x_3$	$-6.66x_9$	$-90.63x_4$	$-32.61x_7$ $-3.39x_{13}$
x_5	64.3421052632	$-0.34x_{10}$	$-8.17x_2$	$-4.97x_3$	$-1.22x_9$	$-16.39x_4$	$-3.57x_7$ $-0.43x_{13}$
x_1	36.1052631579	$-0.11x_{10}$	$-5.05x_2$	$-2.68x_3$	$-0.68x_9$	$-8.74x_4$	$-1.79x_7$ $-0.21x_{13}$
x_{11}	521.368421053	$-1.37x_{10}$	$-80.68x_2$	$-37.89x_3$	$-8.89x_9$	$-119.58x_4$	$-32.26x_7$ $-3.74x_{13}$
x_{12}	281.421052632	$-1.42x_{10}$	$-37.71x_2$	$-24.74x_3$	$-6.24x_9$	$-79.95x_4$	$-0.66x_7$ $-1.34x_{13}$
x_6	5.92105263158	$+0.08x_{10}$	$-1.46x_2$	$+0.76x_3$	$+0.01x_9$	$-0.45x_4$	$-0.91x_7$ $-0.09x_{13}$
x_{14}	-0.947368421053	$+0.95x_{10}$	$+0.97x_2$	$+0.16x_3$	$+0.66x_9$	$+0.63x_4$	$+0.61x_7$ $+0.39x_{13}$
x_{15}	-0.342105263158	$+0.34x_{10}$	$+0.17x_2$	$+0.97x_3$	$+0.22x_9$	$+0.39x_4$	$+0.57x_7$ $+0.43x_{13}$
x_{16}	-0.105263157895	$+0.11x_{10}$	$+0.05x_2$	$+0.68x_3$	$+0.68x_9$	$+0.74x_4$	$+0.79x_7$ $+0.21x_{13}$
x_{17}	-0.368421052632	$+0.37x_{10}$	$+0.68x_2$	$+0.89x_3$	$+0.89x_9$	$+0.58x_4$	$+0.26x_7$ $+0.74x_{13}$
x_{18}	-0.42105263158	$+0.42x_{10}$	$+0.71x_2$	$+0.74x_3$	$+0.24x_9$	$+0.95x_4$	$+0.66x_7$ $+0.34x_{13}$
x_{19}	-0.921052631579	$+0.92x_{10}$	$+0.46x_2$	$+0.24x_3$	$+0.99x_9$	$+0.45x_4$	$+0.91x_7$ $+0.09x_{13}$
z	179.157894737	$-1.16x_{10}$	$-22.08x_2$	$-19.53x_3$	$-4.03x_9$	$-44.11x_4$	$-1.18x_7$ $-0.82x_{13}$

Forming the dual dictionary:

The Final Dual Dictionary is:

Final primal dictionary obtained:

x_8	437.0	$-2.06x_{14}$	$-58.97x_2$	$-16.83x_3$	$-5.31x_9$	$-89.33x_4$	$-31.36x_7$	$-2.58x_{13}$
x_5	64.0	$-0.36x_{14}$	$-7.82x_2$	$-4.92x_3$	$-0.99x_9$	$-16.17x_4$	$-3.35x_7$	$-0.29x_{13}$
x_1	36.0	$-0.11x_{14}$	$-4.94x_2$	$-2.67x_3$	$-0.61x_9$	$-8.67x_4$	$-1.72x_7$	$-0.17x_{13}$
x_{11}	520.0	$-1.44x_{14}$	$-79.28x_2$	$-37.67x_3$	$-7.94x_9$	$-118.67x_4$	$-31.39x_7$	$-3.17x_{13}$
x_{12}	280.0	$-1.50x_{14}$	$-36.25x_2$	$-24.50x_3$	$-5.25x_9$	$-79.00x_4$	$+0.25x_7$	$-0.75x_{13}$
x_6	6.0	$+0.08x_{14}$	$-1.54x_2$	$+0.75x_3$	$-0.04x_9$	$-0.50x_4$	$-0.96x_7$	$-0.13x_{13}$
x_{10}	1.0	$+1.06x_{14}$	$-1.03x_2$	$-0.17x_3$	$-0.69x_9$	$-0.67x_4$	$-0.64x_7$	$-0.42x_{13}$
x_{15}	$5.98410210273e-14$	$+0.36x_{14}$	$-0.18x_2$	$+0.92x_3$	$-0.01x_9$	$+0.17x_4$	$+0.35x_7$	$+0.29x_{13}$
x_{16}	$-1.0977330156e-14$	$+0.11x_{14}$	$-0.06x_2$	$+0.67x_3$	$+0.61x_9$	$+0.67x_4$	$+0.72x_7$	$+0.17x_{13}$
x_{17}	$-1.99507077525e-13$	$+0.39x_{14}$	$+0.31x_2$	$+0.83x_3$	$+0.64x_9$	$+0.33x_4$	$+0.03x_7$	$+0.58x_{13}$
x_{18}	$-4.39481784298e-13$	$+0.44x_{14}$	$+0.28x_2$	$+0.67x_3$	$-0.06x_9$	$+0.67x_4$	$+0.39x_7$	$+0.17x_{13}$
x_{19}	$3.12527781432e-13$	$+0.97x_{14}$	$-0.49x_2$	$+0.08x_3$	$+0.35x_9$	$-0.17x_4$	$+0.32x_7$	$-0.29x_{13}$
z	178.0	$-1.22x_{14}$	$-20.89x_2$	$-19.33x_3$	$-3.22x_9$	$-43.33x_4$	$-0.44x_7$	$-0.33x_{13}$

Final answer: 178.000000 Done.Added 6 cuts