Read in the following dictionary:

x_9	-7.0	$-7.00x_1$	$-7.00x_2$	$+10.00x_3$	$+5.00x_4$	$-8.00x_5$	$+4.00x_6$	$+7.00x_7$	$-10.00x_8$
x_{10}	28.0	$-5.00x_1$	$-2.00x_2$	$-3.00x_3$	$+10.00x_4$	$+5.00x_5$	$+3.00x_6$	$-10.00x_7$	$-9.00x_8$
x_{11}	35.0	$-6.00x_1$	$-6.00x_2$	$-8.00x_3$	$-1.00x_4$	$+5.00x_5$	$+1.00x_6$	$-9.00x_7$	$+6.00x_8$
x_{12}	-13.0		$-3.00x_2$	$+7.00x_3$	$+7.00x_4$	$+5.00x_5$	$+5.00x_6$	$-10.00x_7$	$-5.00x_8$
x_{13}	-11.0	$+5.00x_1$	$-2.00x_2$	$+2.00x_3$	$+6.00x_4$	$-9.00x_5$	$+8.00x_6$	$+5.00x_7$	$-3.00x_8$
z	0.0	$-4.00x_1$	$-4.00x_2$	$+4.00x_3$	$-5.00x_4$	$-4.00x_5$	$+3.00x_6$	$-3.00x_7$	$-3.00x_8$

0.1 Initialization Phase: Dual Problem Solving

New Objective in primal was changed to :

$$\max \sum_{j=1}^{8} -x_j$$

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	$+7.00y_9$	$+5.00y_{10}$	$+6.00y_{11}$		$-5.00y_{13}$
y_2	1.0	$+7.00y_9$	$+2.00y_{10}$	$+6.00y_{11}$	$+3.00y_{12}$	$+2.00y_{13}$
y_3	1.0	$-10.00y_9$	$+3.00y_{10}$	$+8.00y_{11}$	$-7.00y_{12}$	$-2.00y_{13}$
y_4	1.0	$-5.00y_9$	$-10.00y_{10}$	$+1.00y_{11}$	$-7.00y_{12}$	$-6.00y_{13}$
y_5	1.0	$+8.00y_9$	$-5.00y_{10}$	$-5.00y_{11}$	$-5.00y_{12}$	$+9.00y_{13}$
y_6	1.0	$-4.00y_9$	$-3.00y_{10}$	$-1.00y_{11}$	$-5.00y_{12}$	$-8.00y_{13}$
y_7	1.0	$-7.00y_9$	$+10.00y_{10}$	$+9.00y_{11}$	$+10.00y_{12}$	$-5.00y_{13}$
y_8	1.0	$+10.00y_9$	$+9.00y_{10}$	$-6.00y_{11}$	$+5.00y_{12}$	$+3.00y_{13}$
z	-0	$+7.00y_9$	$-28.00y_{10}$	$-35.00y_{11}$	$+13.00y_{12}$	$+11.00y_{13}$

Initialization succeeded in finding final dual dictionary with 4 pivots

y_1	1.0	$+7.00y_9$	$+5.00y_{10}$	$+6.00y_{11}$		$-5.00y_{13}$
y_2	1.42857142857	$+4.86y_9$	$-2.29y_{10}$	$+6.43y_{11}$	$-0.43y_4$	$-0.57y_{13}$
y_3	$6.93889390391e-17$	$-5.00y_9$	$+13.00y_{10}$	$+7.00y_{11}$	$+1.00y_4$	$+4.00y_{13}$
y_{12}	0.142857142857	$-0.71y_9$	$-1.43y_{10}$	$+0.14y_{11}$	$-0.14y_4$	$-0.86y_{13}$
y_5	0.285714285714	$+11.57y_9$	$+2.14y_{10}$	$-5.71y_{11}$	$+0.71y_4$	$+13.29y_{13}$
y_6	0.285714285714	$-0.43y_9$	$+4.14y_{10}$	$-1.71y_{11}$	$+0.71y_4$	$-3.71y_{13}$
y_7	2.42857142857	$-14.14y_9$	$-4.29y_{10}$	$+10.43y_{11}$	$-1.43y_4$	$-13.57y_{13}$
y_8	1.71428571429	$+6.43y_9$	$+1.86y_{10}$	$-5.29y_{11}$	$-0.71y_4$	$-1.29y_{13}$
z	1.85714285714	$-2.29y_9$	$-46.57y_{10}$	$-33.14y_{11}$	$-1.86y_4$	$-0.14y_{13}$

Primal Dictionary is:

x_9	2.28571428571	$-7.00x_1$	$-4.86x_2$	$+5.00x_3$	$+0.71x_{12}$	$-11.57x_5$	$+0.43x_6$	$+14.14x_7$	$-6.43x_8$
x_{10}	46.5714285714	$-5.00x_1$	$+2.29x_2$	$-13.00x_3$	$+1.43x_{12}$	$-2.14x_5$	$-4.14x_6$	$+4.29x_7$	$-1.86x_8$
x_{11}	33.1428571429	$-6.00x_1$	$-6.43x_2$	$-7.00x_3$	$-0.14x_{12}$	$+5.71x_5$	$+1.71x_6$	$-10.43x_7$	$+5.29x_8$
x_4	1.85714285714		$+0.43x_2$	$-1.00x_3$	$+0.14x_{12}$	$-0.71x_5$	$-0.71x_6$	$+1.43x_7$	$+0.71x_8$
x_{13}	0.142857142857	$+5.00x_1$	$+0.57x_2$	$-4.00x_3$	$+0.86x_{12}$	$-13.29x_5$	$+3.71x_6$	$+13.57x_7$	$+1.29x_8$
z	-1.85714285714	$-1.00x_1$	$-1.43x_2$	$-0.00x_3$	$-0.14x_{12}$	$-0.29x_5$	$-0.29x_6$	$-2.43x_7$	$-1.71x_8$

Primal Dictionary with original objective is:

x_9	2.28571428571	$-7.00x_1 -4.86x_2 +5.00x_3 +0.71x_{12} -11.57x_5 +0.43x_6 +14.14x_7 -6.43x_8$
x_{10}	46.5714285714	$-5.00x_1 +2.29x_2 -13.00x_3 +1.43x_{12} -2.14x_5 -4.14x_6 +4.29x_7 -1.86x_8$
x_{11}	33.1428571429	$-6.00x_1 -6.43x_2 -7.00x_3 -0.14x_{12} +5.71x_5 +1.71x_6 -10.43x_7 +5.29x_8$
x_4	1.85714285714	$+0.43x_2 -1.00x_3 +0.14x_{12} -0.71x_5 -0.71x_6 +1.43x_7 +0.71x_8$
x_{13}	0.142857142857	$+5.00x_1 +0.57x_2 -4.00x_3 +0.86x_{12} -13.29x_5 +3.71x_6 +13.57x_7 +1.29x_8$
z	-9.28571428571	$-4.00x_1 -6.14x_2 +9.00x_3 -0.71x_{12} -0.43x_5 +6.57x_6 -10.14x_7 -6.57x_8$

1 Optimization Phase Simplex

Starting Dictionary is:

x_9	2.28571428571	$-7.00x_1 -4.86x_2 +5.00x_3 +0.71x_{12} -11.57x_5 +0.43x_6 +14.14x_7 -6.43x_8$
x_{10}	46.5714285714	$-5.00x_1 +2.29x_2 -13.00x_3 +1.43x_{12} -2.14x_5 -4.14x_6 +4.29x_7 -1.86x_8$
x_{11}	33.1428571429	$-6.00x_1 -6.43x_2 -7.00x_3 -0.14x_{12} +5.71x_5 +1.71x_6 -10.43x_7 +5.29x_8$
x_4	1.85714285714	$+0.43x_2 -1.00x_3 +0.14x_{12} -0.71x_5 -0.71x_6 +1.43x_7 +0.71x_8$
x_{13}	0.142857142857	$+5.00x_1 +0.57x_2 -4.00x_3 +0.86x_{12} -13.29x_5 +3.71x_6 +13.57x_7 +1.29x_8$
z	-9.28571428571	$-4.00x_1 -6.14x_2 +9.00x_3 -0.71x_{12} -0.43x_5 +6.57x_6 -10.14x_7 -6.57x_8$

x_3 enters and x_{13} leaves

x_9	2.46428571429	$-0.75x_1 -4.14x_2 -1.25x_{13} +1.79x_{12} -28.18x_5 +5.07x_6 +31.11x_7 -4.82x_8$
x_{10}	46.1071428571	$-21.25x_1 +0.43x_2 +3.25x_{13} -1.36x_{12} +41.04x_5 -16.21x_6 -39.82x_7 -6.04x_8$
x_{11}	32.8928571429	$-14.75x_1 -7.43x_2 +1.75x_{13} -1.64x_{12} +28.96x_5 -4.79x_6 -34.18x_7 +3.04x_8$
x_4	1.82142857143	$-1.25x_1 +0.29x_2 +0.25x_{13} -0.07x_{12} +2.61x_5 -1.64x_6 -1.96x_7 +0.39x_8$
x_3	0.0357142857143	$+1.25x_1 +0.14x_2 -0.25x_{13} +0.21x_{12} -3.32x_5 +0.93x_6 +3.39x_7 +0.32x_8$
z	-8.96428571429	$+7.25x_1 -4.86x_2 -2.25x_{13} +1.21x_{12} -30.32x_5 +14.93x_6 +20.39x_7 -3.68x_8$

x_1 enters and x_4 leaves

x_9	1.37142857143	$+0.60x_4 -4.31x_2 -1.40x_{13} +1.83x_{12} -29.74x_5 +6.06x_6 +32.29x_7 -5.06x_8$
x_{10}	15.1428571429	$+17.00x_4 -4.43x_2 -1.00x_{13} -0.14x_{12} -3.29x_5 +11.71x_6 -6.43x_7 -12.71x_8$
x_{11}	11.4	$+11.80x_4 -10.80x_2 -1.20x_{13} -0.80x_{12} -1.80x_5 +14.60x_6 -11.00x_7 -1.60x_8$
x_1	1.45714285714	$-0.80x_4 +0.23x_2 +0.20x_{13} -0.06x_{12} +2.09x_5 -1.31x_6 -1.57x_7 +0.31x_8$
x_3	1.85714285714	$-1.00x_4 +0.43x_2 +0.14x_{12} -0.71x_5 -0.71x_6 +1.43x_7 +0.71x_8$
z	1.6	$-5.80x_4 -3.20x_2 -0.80x_{13} +0.80x_{12} -15.20x_5 +5.40x_6 +9.00x_7 -1.40x_8$

x_6 enters and x_1 leaves

x_9	8.08695652174	$-3.09x_4 -3.26x_2 -0.48x_{13} +1.57x_{12} -20.13x_5 -4.61x_1 +25.04x_7 -3.61x_8$
x_{10}	28.1304347826	$+9.87x_4 -2.39x_2 +0.78x_{13} -0.65x_{12} +15.30x_5 -8.91x_1 -20.43x_7 -9.91x_8$
x_{11}	27.5869565217	$+2.91x_4 -8.26x_2 +1.02x_{13} -1.43x_{12} +21.37x_5 -11.11x_1 -28.46x_7 +1.89x_8$
x_6	1.10869565217	$-0.61x_4 +0.17x_2 +0.15x_{13} -0.04x_{12} +1.59x_5 -0.76x_1 -1.20x_7 +0.24x_8$
x_3	1.0652173913	$-0.57x_4 +0.30x_2 -0.11x_{13} +0.17x_{12} -1.85x_5 +0.54x_1 +2.28x_7 +0.54x_8$
z	7.58695652174	$-9.09x_4 -2.26x_2 +0.02x_{13} +0.57x_{12} -6.63x_5 -4.11x_1 +2.54x_7 -0.11x_8$

x_7 enters and x_6 leaves

x_9	31.3090909091	$-15.84x_4$	$+0.38x_2$	$+2.71x_{13}$	$+0.65x_{12}$	$+13.11x_5$	$-20.55x_1$	$-20.95x_6$	$+1.40x_8$
x_{10}	9.18181818182	$+20.27x_4$	$-5.36x_2$	$-1.82x_{13}$	$+0.09x_{12}$	$-11.82x_5$	$+4.09x_1$	$+17.09x_6$	$-14.00x_8$
x_{11}	1.2	$+17.40x_4$	$-12.40x_2$	$-2.60x_{13}$	$-0.40x_{12}$	$-16.40x_5$	$+7.00x_1$	$+23.80x_6$	$-3.80x_8$
x_7	0.927272727273	$-0.51x_4$	$+0.15x_2$	$+0.13x_{13}$	$-0.04x_{12}$	$+1.33x_5$	$-0.64x_1$	$-0.84x_6$	$+0.20x_8$
x_3	3.18181818182	$-1.73x_4$	$+0.64x_2$	$+0.18x_{13}$	$+0.09x_{12}$	$+1.18x_5$	$-0.91x_1$	$-1.91x_6$	$+1.00x_8$
z	9.94545454545	$-10.38x_4$	$-1.89x_2$	$+0.35x_{13}$	$+0.47x_{12}$	$-3.25x_5$	$-5.73x_1$	$-2.13x_6$	$+0.40x_8$

x_8 enters and x_{11} leaves

x_9	31.7511961722	$-9.43x_4$	$-4.19x_2$	$+1.75x_{13}$	$+0.51x_{12}$	$+7.07x_5$	$-17.97x_1$	$-12.18x_6$	$-0.37x_{11}$
x_{10}	4.76076555024	$-43.83x_4$	$+40.32x_2$	$+7.76x_{13}$	$+1.56x_{12}$	$+48.60x_5$	$-21.70x_1$	$-70.59x_6$	$+3.68x_{11}$
x_8	0.315789473684	$+4.58x_4$	$-3.26x_2$	$-0.68x_{13}$	$-0.11x_{12}$	$-4.32x_5$	$+1.84x_1$	$+6.26x_6$	$-0.26x_{11}$
x_7	0.99043062201	$+0.41x_4$	$-0.51x_2$	$-0.01x_{13}$	$-0.06x_{12}$	$+0.46x_5$	$-0.27x_1$	$+0.42x_6$	$-0.05x_{11}$
x_3	3.4976076555	$+2.85x_4$	$-2.63x_2$	$-0.50x_{13}$	$-0.01x_{12}$	$-3.13x_5$	$+0.93x_1$	$+4.35x_6$	$-0.26x_{11}$
z	10.0717703349	$-8.55x_4$	$-3.20x_2$	$+0.07x_{13}$	$+0.43x_{12}$	$-4.98x_5$	$-4.99x_1$	$+0.38x_6$	$-0.11x_{11}$

x_6 enters and x_{10} leaves

x_9	30.9299850888	$-1.86x_4$	$-11.14x_2$	$+0.41x_{13}$	$+0.24x_{12}$	$-1.32x_5$	$-14.22x_1$	$+0.17x_{10}$	$-1.00x_{11}$
x_6	0.0674393384845	$-0.62x_4$	$+0.57x_2$	$+0.11x_{13}$	$+0.02x_{12}$	$+0.69x_5$	$-0.31x_1$	$-0.01x_{10}$	$+0.05x_{11}$
x_8	0.738172698929	$+0.69x_4$	$+0.31x_2$	$+0.00x_{13}$	$+0.03x_{12}$	$-0.00x_5$	$-0.08x_1$	$-0.09x_{10}$	$+0.06x_{11}$
x_7	1.01850345669	$+0.15x_4$	$-0.27x_2$	$+0.04x_{13}$	$-0.05x_{12}$	$+0.75x_5$	$-0.40x_1$	$-0.01x_{10}$	$-0.03x_{11}$
x_3	3.79124305273	$+0.15x_4$	$-0.14x_2$	$-0.02x_{13}$	$+0.08x_{12}$	$-0.14x_5$	$-0.41x_1$	$-0.06x_{10}$	$-0.04x_{11}$
z	10.0972617595	$-8.78x_4$	$-2.98x_2$	$+0.11x_{13}$	$+0.44x_{12}$	$-4.72x_5$	$-5.11x_1$	$-0.01x_{10}$	$-0.09x_{11}$

x_{12} enters and x_7 leaves

x_9	35.9451476793	$-1.14x_4$	$-12.47x_2$	$+0.59x_{13}$	$-4.92x_7$	$+2.38x_5$	$-16.17x_1$	$+0.14x_{10}$	$-1.16x_{11}$
x_6	0.535864978903	$-0.55x_4$	$+0.45x_2$	$+0.13x_{13}$	$-0.46x_7$	$+1.03x_5$	$-0.49x_1$	$-0.02x_{10}$	$+0.04x_{11}$
x_8	1.44725738397	$+0.79x_4$	$+0.13x_2$	$+0.03x_{13}$	$-0.70x_7$	$+0.52x_5$	$-0.36x_1$	$-0.09x_{10}$	$+0.04x_{11}$
x_{12}	21.135021097	$+3.08x_4$	$-5.59x_2$	$+0.75x_{13}$	$-20.75x_7$	$+15.58x_5$	$-8.22x_1$	$-0.12x_{10}$	$-0.64x_{11}$
x_3	5.52742616034	$+0.40x_4$	$-0.60x_2$	$+0.04x_{13}$	$-1.70x_7$	$+1.14x_5$	$-1.08x_1$	$-0.07x_{10}$	$-0.09x_{11}$
z	19.3755274262	$-7.43x_4$	$-5.43x_2$	$+0.44x_{13}$	$-9.11x_7$	$+2.12x_5$	$-8.71x_1$	$-0.06x_{10}$	$-0.37x_{11}$

x_5 enters and Unbounded Dictionary!
x_5 enters and Unbounded Dictionary!