Read in the following dictionary:

x_6	3.0	$+7.00x_1$	$+2.00x_2$	$-10.00x_3$	$-2.00x_4$	$-6.00x_5$
x_7	1.0	$-1.00x_1$	$+3.00x_2$	$+8.00x_3$	$+5.00x_4$	$-4.00x_5$
x_8	-24.0	$+1.00x_1$	$+10.00x_2$	$+8.00x_3$	$-8.00x_4$	$+9.00x_5$
x_9	6.0	$-4.00x_1$	$+7.00x_2$	$+7.00x_3$	$+4.00x_4$	$-6.00x_5$
x_{10}	43.0	$-9.00x_1$		$-3.00x_3$	$-7.00x_4$	$-4.00x_5$
z	0.0	$+5.00x_1$	$-1.00x_2$	$+4.00x_3$	$+4.00x_4$	$+5.00x_5$

0.1 Initialization Phase: Dual Problem Solving

New Objective in primal was changed to :

$$\max \sum_{j=1}^{5} -x_j$$

Primal variable x_j corresponds to dual variable y_j for $j = 1, \ldots, 10$ Dual Dictionary (with objective changed is):

y_1	1.0	$-7.00y_6$	$+1.00y_7$	$-1.00y_8$	$+4.00y_9$	$+9.00y_{10}$
y_2	1.0	$-2.00y_6$	$-3.00y_7$	$-10.00y_8$	$-7.00y_9$	
y_3	1.0	$+10.00y_6$	$-8.00y_7$	$-8.00y_8$	$-7.00y_9$	$+3.00y_{10}$
y_4	1.0	$+2.00y_6$	$-5.00y_7$	$+8.00y_8$	$-4.00y_9$	$+7.00y_{10}$
y_5	1.0	$+6.00y_6$	$+4.00y_7$	$-9.00y_8$	$+6.00y_9$	$+4.00y_{10}$
z	-0	$-3.00y_6$	$-1.00y_7$	$+24.00y_8$	$-6.00y_9$	$-43.00y_{10}$

Initialization succeeded in finding final dual dictionary with 2 pivots

y_1	0.9	$-6.80y_6$	$+1.30y_7$	$+0.10y_2$	$+4.70y_9$	$+9.00y_{10}$
y_8	0.1	$-0.20y_6$	$-0.30y_7$	$-0.10y_2$	$-0.70y_9$	
y_3	0.2	$+11.60y_6$	$-5.60y_7$	$+0.80y_2$	$-1.40y_9$	$+3.00y_{10}$
y_4	1.8	$+0.40y_6$	$-7.40y_7$	$-0.80y_2$	$-9.60y_9$	$+7.00y_{10}$
y_5	0.1	$+7.80y_6$	$+6.70y_7$	$+0.90y_2$	$+12.30y_9$	$+4.00y_{10}$
z	2.4	$-7.80y_6$	$-8.20y_7$	$-2.40y_2$	$-22.80y_9$	$-43.00y_{10}$

Primal Dictionary is:

x_6	7.8	$+6.80x_1$	$+0.20x_8$	$-11.60x_3$	$-0.40x_4$	$-7.80x_5$
x_7	8.2	$-1.30x_1$	$+0.30x_8$	$+5.60x_3$	$+7.40x_4$	$-6.70x_5$
x_2	2.4	$-0.10x_1$	$+0.10x_8$	$-0.80x_3$	$+0.80x_4$	$-0.90x_5$
x_9	22.8	$-4.70x_1$	$+0.70x_8$	$+1.40x_3$	$+9.60x_4$	$-12.30x_5$
x_{10}	43.0	$-9.00x_1$		$-3.00x_3$	$-7.00x_4$	$-4.00x_5$
z	-2.4	$-0.90x_1$	$-0.10x_8$	$-0.20x_3$	$-1.80x_4$	$-0.10x_5$

Primal Dictionary with original objective is:

x_6	7.8	$+6.80x_1$	$+0.20x_8$	$-11.60x_3$	$-0.40x_4$ $-7.80x_5$
x_7	8.2	$-1.30x_1$	$+0.30x_8$	$+5.60x_3$	$+7.40x_4$ $-6.70x_5$
x_2	2.4	$-0.10x_1$	$+0.10x_8$	$-0.80x_3$	$+0.80x_4$ $-0.90x_5$
x_9	22.8	$-4.70x_1$	$+0.70x_8$	$+1.40x_3$	$+9.60x_4$ $-12.30x_5$
x_{10}	43.0	$-9.00x_1$		$-3.00x_3$	$-7.00x_4$ $-4.00x_5$
z	-2.4	$+5.10x_1$	$-0.10x_8$	$+4.80x_3$	$+3.20x_4$ $+5.90x_5$

1 Optimization Phase Simplex

Starting Dictionary is:

x_6	7.8	$+6.80x_1$	$+0.20x_8$	$-11.60x_3$	$-0.40x_4$ $-7.80x_5$
x_7	8.2	$-1.30x_1$	$+0.30x_8$	$+5.60x_3$	$+7.40x_4$ $-6.70x_5$
x_2	2.4	$-0.10x_1$	$+0.10x_8$	$-0.80x_3$	$+0.80x_4$ $-0.90x_5$
x_9	22.8	$-4.70x_1$	$+0.70x_8$	$+1.40x_3$	$+9.60x_4$ $-12.30x_5$
x_{10}	43.0	$-9.00x_1$		$-3.00x_3$	$-7.00x_4$ $-4.00x_5$
z	-2.4	$+5.10x_1$	$-0.10x_8$	$+4.80x_3$	$+3.20x_4$ $+5.90x_5$

x_1 enters and x_{10} leaves

x_6	40.2888888889	$-0.76x_{10}$	$+0.20x_8$	$-13.87x_3$	$-5.69x_4$ $-10.82x_5$
x_7	1.98888888889	$+0.14x_{10}$	$+0.30x_8$	$+6.03x_3$	$+8.41x_4$ $-6.12x_5$
x_2	1.92222222222	$+0.01x_{10}$	$+0.10x_8$	$-0.77x_3$	$+0.88x_4$ $-0.86x_5$
x_9	0.344444444444	$+0.52x_{10}$	$+0.70x_8$	$+2.97x_3$	$+13.26x_4$ $-10.21x_5$
x_1	4.77777777778	$-0.11x_{10}$		$-0.33x_3$	$-0.78x_4$ $-0.44x_5$
z	21.9666666667	$-0.57x_{10}$	$-0.10x_8$	$+3.10x_3$	$-0.77x_4$ $+3.63x_5$

x_3 enters and x_2 leaves

x_6	5.52173913043	$-0.96x_{10}$	$-1.61x_8$	$+18.09x_2$	$-21.57x_4$ $+4.65x_5$
x_7	17.115942029	$+0.23x_{10}$	$+1.09x_8$	$-7.87x_2$	$+15.32x_4$ $-12.86x_5$
x_3	2.50724637681	$+0.01x_{10}$	$+0.13x_8$	$-1.30x_2$	$+1.14x_4$ $-1.12x_5$
x_9	7.78260869565	$+0.57x_{10}$	$+1.09x_8$	$-3.87x_2$	$+16.65x_4$ $-13.52x_5$
x_1	3.94202898551	$-0.12x_{10}$	$-0.04x_8$	$+0.43x_2$	$-1.16x_4$ $-0.07x_5$
z	29.7391304348	$-0.52x_{10}$	$+0.30x_8$	$-4.04x_2$	$+2.78x_4$ $+0.17x_5$

x_4 enters and x_6 leaves

x_4	0.256048387097	$-0.04x_{10}$	$-0.07x_8$	$+0.84x_2$	$-0.05x_6$ $+0.22x_5$
x_7	21.0383064516	$-0.45x_{10}$	$-0.06x_8$	$+4.98x_2$	$-0.71x_6$ $-9.55x_5$
x_3	2.80040322581	$-0.04x_{10}$	$+0.05x_8$	$-0.34x_2$	$-0.05x_6$ $-0.87x_5$
x_9	12.0463709677	$-0.17x_{10}$	$-0.16x_8$	$+10.10x_2$	$-0.77x_6$ $-9.93x_5$
x_1	3.64516129032	$-0.06x_{10}$	$+0.04x_8$	$-0.54x_2$	$+0.05x_6$ $-0.32x_5$
z	30.4516129032	$-0.65x_{10}$	$+0.10x_8$	$-1.71x_2$	$-0.13x_6$ $+0.77x_5$

x_5 enters and x_9 leaves

x_4	0.517766497462	$-0.05x_{10} -0.08x_8 +1.06x_2 -0.06x_6 -0.02x_9$
x_7	9.45177664975	$-0.28x_{10} +0.09x_8 -4.73x_2 +0.03x_6 +0.96x_9$
x_3	1.7461928934	$-0.02x_{10} +0.06x_8 -1.23x_2 +0.01x_6 +0.09x_9$
x_5	1.21319796954	$-0.02x_{10} -0.02x_8 +1.02x_2 -0.08x_6 -0.10x_9$
x_1	3.2538071066	$-0.06x_{10} +0.05x_8 -0.87x_2 +0.08x_6 +0.03x_9$
z	31.3908629442	$-0.66x_{10} +0.08x_8 -0.92x_2 -0.19x_6 -0.08x_9$

x_8 enters and x_4 leaves

x_8	6.640625	$-0.62x_{10} -12.83x_4 +13.57x_2 -0.81x_6 -0.28x_9$
x_7	10.0729166667	$-0.34x_{10} -1.20x_4 -3.46x_2 -0.04x_6 +0.94x_9$
x_3	2.13541666667	$-0.06x_{10} -0.75x_4 -0.43x_2 -0.03x_6 +0.07x_9$
x_5	1.109375	$-0.01x_{10} +0.20x_4 +0.80x_2 -0.07x_6 -0.10x_9$
x_1	3.57291666667	$-0.09x_{10} -0.62x_4 -0.21x_2 +0.04x_6 +0.02x_9$
z	31.953125	$-0.71x_{10} -1.09x_4 +0.23x_2 -0.26x_6 -0.10x_9$

x_2 enters and x_7 leaves

x_8	46.1067669173	$-1.94x_{10} -17.53x_4 -3.92x_7 -0.98x_6 +3.39x_9$
x_2	2.90827067669	$-0.10x_{10} -0.35x_4 -0.29x_7 -0.01x_6 +0.27x_9$
x_3	0.878195488722	$-0.02x_{10} -0.60x_4 +0.12x_7 -0.03x_6 -0.05x_9$
x_5	3.44962406015	$-0.09x_{10} -0.08x_4 -0.23x_7 -0.08x_6 +0.12x_9$
x_1	2.95187969925	$-0.07x_{10} -0.54x_4 +0.06x_7 +0.04x_6 -0.04x_9$
z	32.6120300752	$-0.73x_{10} -1.16x_4 -0.07x_7 -0.26x_6 -0.04x_9$

Final Dictionary Solution: 32.6120300752 Num Pivots: 7