Read in the following dictionary:

x_6	11.0	$-2.00x_1$	$+5.00x_2$	$+2.00x_3$	$+5.00x_4$	$-10.00x_5$
x_7	-4.0	$+3.00x_1$	$-2.00x_2$	$-2.00x_3$		$+9.00x_5$
x_8	27.0	$+3.00x_1$	$-6.00x_2$	$-2.00x_3$	$-4.00x_4$	$-8.00x_5$
x_9	7.0	$-10.00x_1$	$+10.00x_2$	$-3.00x_3$	$+10.00x_4$	$-6.00x_5$
x_{10}	20.0	$+7.00x_1$	$-9.00x_2$	$-2.00x_3$	$+1.00x_4$	$-3.00x_5$
x_{11}	15.0	$+8.00x_1$		$-2.00x_3$	$-1.00x_4$	$-9.00x_5$
x_{12}	18.0	$+1.00x_1$	$-7.00x_2$	$-10.00x_3$	$-4.00x_4$	$+4.00x_5$
x_{13}	-4.0	$+10.00x_1$	$+3.00x_2$	$+3.00x_3$	$+7.00x_4$	
x_{14}	-5.0	$+4.00x_1$	$-7.00x_2$	$-5.00x_3$	$+8.00x_4$	$+10.00x_5$
z	0.0	$+3.00x_1$	$+1.00x_2$	$+5.00x_3$	$-1.00x_4$	$-5.00x_5$

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 $j = 1, \ldots, 14$ Dual Dictionary (with objective changed is):

y_1	1.0	$+2.00y_6$	$-3.00y_7$	$-3.00y_8$	$+10.00y_9$	$-7.00y_{10}$	$-8.00y_{11}$	$-1.00y_{12}$	$-10.00y_{13}$	$-4.00y_{14}$
y_2	1.0	$-5.00y_6$	$+2.00y_7$	$+6.00y_8$	$-10.00y_9$	$+9.00y_{10}$		$+7.00y_{12}$	$-3.00y_{13}$	$+7.00y_{14}$
y_3	1.0	$-2.00y_6$	$+2.00y_7$	$+2.00y_8$	$+3.00y_9$	$+2.00y_{10}$	$+2.00y_{11}$	$+10.00y_{12}$	$-3.00y_{13}$	$+5.00y_{14}$
y_4	1.0	$-5.00y_6$		$+4.00y_8$	$-10.00y_9$	$-1.00y_{10}$	$+1.00y_{11}$	$+4.00y_{12}$	$-7.00y_{13}$	$-8.00y_{14}$
y_5	1.0	$+10.00y_6$	$-9.00y_7$	$+8.00y_8$	$+6.00y_9$	$+3.00y_{10}$	$+9.00y_{11}$	$-4.00y_{12}$		$-10.00y_{14}$
z	-0	$-11.00y_6$	$+4.00y_7$	$-27.00y_8$	$-7.00y_9$	$-20.00y_{10}$	$-15.00y_{11}$	$-18.00y_{12}$	$+4.00y_{13}$	$+5.00y_{14}$

Initialization succeeded in finding final dual dictionary with 4 pivots

y_{13}	0.0619469026549	$-0.10y_6$	$+0.04y_5$	$-0.64y_8$	$+0.94y_9$	$-0.84y_{10}$	$-1.18y_{11}$		$-0.11y_1$	$+0.0$
y_2	1.37463126844	$-5.06y_6$	$-0.48y_5$	$+14.74y_8$	$-21.37y_9$	$+15.11y_{10}$	$+11.05y_{11}$	$+8.50y_{12}$	$+0.76y_1$	-0.6
y_3	1.23303834808	$-0.99y_6$	$-0.41y_5$	$+8.63y_8$	$-4.23y_9$	$+6.88y_{10}$	$+10.74y_{11}$	$+10.50y_{12}$	$+0.58y_1$	-0.4
y_{14}	0.070796460177	$-0.54y_6$	$-0.03y_5$	$+1.06y_8$	$-2.07y_9$	$+0.61y_{10}$	$+1.15y_{11}$	$+0.50y_{12}$	$+0.09y_1$	-0.1
y_7	0.0324483775811	$+1.71y_6$	$-0.08y_5$	$-0.29y_8$	$+2.97y_9$	$-0.35y_{10}$	$-0.28y_{11}$	$-1.00y_{12}$	$-0.10y_1$	$+0.1$
z	0.731563421829	$-7.24y_6$	$-0.32y_5$	$-25.41y_8$	$-1.73y_9$	$-21.69y_{10}$	$-15.07y_{11}$	$-19.50y_{12}$	$-0.37y_1$	-0.0

Primal Dictionary is:

x_6	7.24483775811	$+0.10x_{13}$	$+5.06x_2$	$+0.99x_3$	$+0.54x_{14}$	$-1.71x_7$
x_5	0.32005899705	$-0.04x_{13}$	$+0.48x_2$	$+0.41x_3$	$+0.03x_{14}$	$+0.08x_7$
x_8	25.4056047198	$+0.64x_{13}$	$-14.74x_2$	$-8.63x_3$	$-1.06x_{14}$	$+0.29x_7$
x_9	1.73156342183	$-0.94x_{13}$	$+21.37x_2$	$+4.23x_3$	$+2.07x_{14}$	$-2.97x_7$
x_{10}	21.6902654867	$+0.84x_{13}$	$-15.11x_2$	$-6.88x_3$	$-0.61x_{14}$	$+0.35x_7$
x_{11}	15.0663716814	$+1.18x_{13}$	$-11.05x_2$	$-10.74x_3$	$-1.15x_{14}$	$+0.28x_7$
x_{12}	19.5		$-8.50x_2$	$-10.50x_3$	$-0.50x_{14}$	$+1.00x_7$
x_1	0.373156342183	$+0.11x_{13}$	$-0.76x_2$	$-0.58x_3$	$-0.09x_{14}$	$+0.10x_7$
x_4	0.0383480825959	$-0.01x_{13}$	$+0.66x_2$	$+0.40x_3$	$+0.13x_{14}$	$-0.15x_7$
z	-0.731563421829	$-0.06x_{13}$	$-1.37x_2$	$-1.23x_3$	$-0.07x_{14}$	$-0.03x_7$

Primal Dictionary with original objective is:

x_6	7.24483775811	$+0.10x_{13}$	$+5.06x_2$	$+0.99x_3$	$+0.54x_{14}$	$-1.71x_7$
x_5	0.32005899705	$-0.04x_{13}$	$+0.48x_2$	$+0.41x_3$	$+0.03x_{14}$	$+0.08x_7$
x_8	25.4056047198	$+0.64x_{13}$	$-14.74x_2$	$-8.63x_3$	$-1.06x_{14}$	$+0.29x_7$
x_9	1.73156342183	$-0.94x_{13}$	$+21.37x_2$	$+4.23x_3$	$+2.07x_{14}$	$-2.97x_7$
x_{10}	21.6902654867	$+0.84x_{13}$	$-15.11x_2$	$-6.88x_3$	$-0.61x_{14}$	$+0.35x_7$
x_{11}	15.0663716814	$+1.18x_{13}$	$-11.05x_2$	$-10.74x_3$	$-1.15x_{14}$	$+0.28x_7$
x_{12}	19.5		$-8.50x_2$	$-10.50x_3$	$-0.50x_{14}$	$+1.00x_7$
x_1	0.373156342183	$+0.11x_{13}$	$-0.76x_2$	$-0.58x_3$	$-0.09x_{14}$	$+0.10x_7$
x_4	0.0383480825959	$-0.01x_{13}$	$+0.66x_2$	$+0.40x_3$	$+0.13x_{14}$	$-0.15x_7$
z	-0.519174041298	$+0.50x_{13}$	$-4.33x_2$	$+0.80x_3$	$-0.57x_{14}$	$+0.07x_7$

1 Optimization Phase Simplex

Starting Dictionary is:

x_6	7.24483775811	$+0.10x_{13}$	$+5.06x_2$	$+0.99x_3$	$+0.54x_{14}$	$-1.71x_7$
x_5	0.32005899705	$-0.04x_{13}$	$+0.48x_2$	$+0.41x_3$	$+0.03x_{14}$	$+0.08x_7$
x_8	25.4056047198	$+0.64x_{13}$	$-14.74x_2$	$-8.63x_3$	$-1.06x_{14}$	$+0.29x_7$
x_9	1.73156342183	$-0.94x_{13}$	$+21.37x_2$	$+4.23x_3$	$+2.07x_{14}$	$-2.97x_7$
x_{10}	21.6902654867	$+0.84x_{13}$	$-15.11x_2$	$-6.88x_3$	$-0.61x_{14}$	$+0.35x_7$
x_{11}	15.0663716814	$+1.18x_{13}$	$-11.05x_2$	$-10.74x_3$	$-1.15x_{14}$	$+0.28x_7$
x_{12}	19.5		$-8.50x_2$	$-10.50x_3$	$-0.50x_{14}$	$+1.00x_7$
x_1	0.373156342183	$+0.11x_{13}$	$-0.76x_2$	$-0.58x_3$	$-0.09x_{14}$	$+0.10x_7$
x_4	0.0383480825959	$-0.01x_{13}$	$+0.66x_2$	$+0.40x_3$	$+0.13x_{14}$	$-0.15x_7$
z	-0.519174041298	$+0.50x_{13}$	$-4.33x_2$	$+0.80x_3$	$-0.57x_{14}$	$+0.07x_7$

x_3 enters and x_1 leaves

x_6	7.88235294118	$+0.28x_{13}$	$+3.76x_2$	$-1.71x_1$	$+0.38x_{14}$	$-1.53x_7$
x_5	0.588235294118	$+0.04x_{13}$	$-0.07x_2$	$-0.72x_1$	$-0.04x_{14}$	$+0.15x_7$
x_8	19.8235294118	$-0.95x_{13}$	$-3.34x_2$	$+14.96x_1$	$+0.33x_{14}$	$-1.26x_7$
x_9	4.47058823529	$-0.16x_{13}$	$+15.78x_2$	$-7.34x_1$	$+1.39x_{14}$	$-2.21x_7$
x_{10}	17.2352941176	$-0.43x_{13}$	$-6.00x_2$	$+11.94x_1$	$+0.50x_{14}$	$-0.89x_7$
x_{11}	8.11764705882	$-0.80x_{13}$	$+3.15x_2$	$+18.62x_1$	$+0.58x_{14}$	$-1.64x_7$
x_{12}	12.7058823529	$-1.93x_{13}$	$+5.38x_2$	$+18.21x_1$	$+1.19x_{14}$	$-0.88x_7$
x_3	0.647058823529	$+0.18x_{13}$	$-1.32x_2$	$-1.73x_1$	$-0.16x_{14}$	$+0.18x_7$
x_4	0.294117647059	$+0.06x_{13}$	$+0.14x_2$	$-0.69x_1$	$+0.07x_{14}$	$-0.08x_7$
z	$-1.11022302463e-16$	$+0.65x_{13}$	$-5.39x_2$	$-1.39x_1$	$-0.70x_{14}$	$+0.22x_7$

x_7 enters and x_9 leaves

x_6	4.77777777778	$+0.39x_{13}$	$-7.19x_2$	$+3.39x_1$	$-0.58x_{14}$	$+0.69x_9$
x_5	0.893518518519	$+0.03x_{13}$	$+1.01x_2$	$-1.22x_1$	$+0.06x_{14}$	$-0.07x_9$
x_8	17.2777777778	$-0.86x_{13}$	$-12.32x_2$	$+19.14x_1$	$-0.46x_{14}$	$+0.57x_9$
x_7	2.02314814815	$-0.07x_{13}$	$+7.14x_2$	$-3.32x_1$	$+0.63x_{14}$	$-0.45x_9$
x_{10}	15.4398148148	$-0.36x_{13}$	$-12.34x_2$	$+14.89x_1$	$-0.06x_{14}$	$+0.40x_9$
x_{11}	4.80092592593	$-0.68x_{13}$	$-8.55x_2$	$+24.07x_1$	$-0.45x_{14}$	$+0.74x_9$
x_{12}	10.9259259259	$-1.87x_{13}$	$-0.90x_2$	$+21.13x_1$	$+0.64x_{14}$	$+0.40x_9$
x_3	1.00925925926	$+0.17x_{13}$	$-0.04x_2$	$-2.33x_1$	$-0.05x_{14}$	$-0.08x_9$
x_4	0.138888888889	$+0.07x_{13}$	$-0.41x_2$	$-0.43x_1$	$+0.02x_{14}$	$+0.03x_9$
z	0.439814814815	$+0.64x_{13}$	$-3.84x_2$	$-2.11x_1$	$-0.56x_{14}$	$-0.10x_9$

x_{13} enters and x_{12} leaves

x_6	7.0495049505	$-0.21x_{12}$	$-7.38x_2$	$+7.78x_1$	$-0.45x_{14}$	$+0.78x_9$
x_5	1.06930693069	$-0.02x_{12}$	$+0.99x_2$	$-0.88x_1$	$+0.07x_{14}$	$-0.06x_9$
x_8	12.2475247525	$+0.46x_{12}$	$-11.91x_2$	$+9.41x_1$	$-0.75x_{14}$	$+0.39x_9$
x_7	1.60396039604	$+0.04x_{12}$	$+7.17x_2$	$-4.13x_1$	$+0.60x_{14}$	$-0.47x_9$
x_{10}	13.3168316832	$+0.19x_{12}$	$-12.16x_2$	$+10.78x_1$	$-0.18x_{14}$	$+0.32x_9$
x_{11}	0.811881188119	$+0.37x_{12}$	$-8.23x_2$	$+16.35x_1$	$-0.69x_{14}$	$+0.60x_9$
x_{13}	5.84158415842	$-0.53x_{12}$	$-0.48x_2$	$+11.30x_1$	$+0.34x_{14}$	$+0.21x_9$
x_3	2.0099009901	$-0.09x_{12}$	$-0.13x_2$	$-0.39x_1$	$+0.01x_{14}$	$-0.04x_9$
x_4	0.544554455446	$-0.04x_{12}$	$-0.44x_2$	$+0.35x_1$	$+0.04x_{14}$	$+0.05x_9$
z	4.15841584158	$-0.34x_{12}$	$-4.14x_2$	$+5.08x_1$	$-0.34x_{14}$	$+0.04x_9$

x_1 enters and x_7 leaves

x_6	10.0700808625	$-0.14x_{12}$	$+6.13x_2$	$-1.88x_7$	$+0.69x_{14}$	$-0.10x_9$
x_5	0.727762803235	$-0.02x_{12}$	$-0.54x_2$	$+0.21x_7$	$-0.06x_{14}$	$+0.04x_9$
x_8	15.9002695418	$+0.55x_{12}$	$+4.43x_2$	$-2.28x_7$	$+0.62x_{14}$	$-0.68x_9$
x_1	0.388140161725	$+0.01x_{12}$	$+1.74x_2$	$-0.24x_7$	$+0.15x_{14}$	$-0.11x_9$
x_{10}	17.5013477089	$+0.29x_{12}$	$+6.55x_2$	$-2.61x_7$	$+1.39x_{14}$	$-0.90x_9$
x_{11}	7.1590296496	$+0.52x_{12}$	$+20.16x_2$	$-3.96x_7$	$+1.70x_{14}$	$-1.25x_9$
x_{13}	10.2264150943	$-0.43x_{12}$	$+19.13x_2$	$-2.73x_7$	$+1.99x_{14}$	$-1.07x_9$
x_3	1.85714285714	$-0.10x_{12}$	$-0.81x_2$	$+0.10x_7$	$-0.05x_{14}$	$+0.00x_9$
x_4	0.681940700809	$-0.03x_{12}$	$+0.17x_2$	$-0.09x_7$	$+0.10x_{14}$	$+0.01x_9$
z	6.12938005391	$-0.29x_{12}$	$+4.67x_2$	$-1.23x_7$	$+0.40x_{14}$	$-0.54x_9$

x_2 enters and x_5 leaves

x_6	18.3869346734	$-0.41x_{12}$	$-11.43x_5$	$+0.55x_7$	$+0.01x_{14}$	$+0.33x_9$
x_2	1.3567839196	$-0.05x_{12}$	$-1.86x_5$	$+0.40x_7$	$-0.11x_{14}$	$+0.07x_9$
x_8	21.9145728643	$+0.35x_{12}$	$-8.26x_5$	$-0.52x_7$	$+0.13x_{14}$	$-0.37x_9$
x_1	2.74371859296	$-0.07x_{12}$	$-3.24x_5$	$+0.45x_7$	$-0.05x_{14}$	$+0.01x_9$
x_{10}	26.391959799	$-0.00x_{12}$	$-12.22x_5$	$-0.01x_7$	$+0.67x_{14}$	$-0.44x_9$
x_{11}	34.5175879397	$-0.40x_{12}$	$-37.59x_5$	$+4.05x_7$	$-0.53x_{14}$	$+0.16x_9$
x_{13}	36.1859296482	$-1.30x_{12}$	$-35.67x_5$	$+4.86x_7$	$-0.12x_{14}$	$+0.28x_9$
x_3	0.758793969849	$-0.06x_{12}$	$+1.51x_5$	$-0.23x_7$	$+0.04x_{14}$	$-0.06x_9$
x_4	0.914572864322	$-0.04x_{12}$	$-0.32x_5$	$-0.02x_7$	$+0.08x_{14}$	$+0.02x_9$
z	12.4673366834	$-0.50x_{12}$	$-8.71x_5$	$+0.63x_7$	$-0.12x_{14}$	$-0.21x_9$

x_7 enters and x_3 leaves

x_6	20.2333333333	$-0.56x_{12}$	$-7.76x_5$	$-2.43x_3$	$+0.11x_{14}$	$+0.19x_9$
x_2	2.68888888889	$-0.15x_{12}$	$+0.79x_5$	$-1.76x_3$	$-0.04x_{14}$	$-0.03x_9$
x_8	20.1777777778	$+0.48x_{12}$	$-11.72x_5$	$+2.29x_3$	$+0.04x_{14}$	$-0.24x_9$
x_1	4.24444444444	$-0.19x_{12}$	$-0.25x_5$	$-1.98x_3$	$+0.04x_{14}$	$-0.10x_9$
x_{10}	26.3666666667	$-0.00x_{12}$	$-12.27x_5$	$+0.03x_3$	$+0.67x_{14}$	$-0.43x_9$
x_{11}	48.1	$-1.44x_{12}$	$-10.58x_5$	$-17.90x_3$	$+0.22x_{14}$	$-0.86x_9$
x_{13}	52.5	$-2.56x_{12}$	$-3.22x_5$	$-21.50x_3$	$+0.78x_{14}$	$-0.94x_9$
x_7	3.35555555556	$-0.26x_{12}$	$+6.67x_5$	$-4.42x_3$	$+0.19x_{14}$	$-0.25x_9$
x_4	0.855555555556	$-0.04x_{12}$	$-0.44x_5$	$+0.08x_3$	$+0.07x_{14}$	$+0.03x_9$
z	14.5666666667	$-0.67x_{12}$	$-4.53x_5$	$-2.77x_3$	$+0.00x_{14}$	$-0.37x_9$

Final Dictionary Solution: 14.5666666667 Num Pivots: 7