

Read in the following dictionary:

$x_{10}$	19.0	$-4.00x_1$	$+8.00x_2$	$+5.00x_3$	$-5.00x_4$	$-7.00x_5$	$-9.00x_6$	$-5.00x_7$	$+3.00x_8$	$-6.00x_9$
$x_{11}$	34.0	$+6.00x_1$	$-10.00x_2$	$-5.00x_3$	$-10.00x_4$	$-2.00x_5$	$+7.00x_6$	$-10.00x_7$	$-3.00x_8$	$+2.00x_9$
$x_{12}$	25.0	$-10.00x_1$	$-3.00x_2$		$-5.00x_4$	$+7.00x_5$	$+2.00x_6$	$+8.00x_7$	$+6.00x_8$	$-1.00x_9$
$x_{13}$	51.0	$-10.00x_1$	$+5.00x_2$	$+1.00x_3$	$-8.00x_4$	$+3.00x_5$	$+8.00x_6$	$+9.00x_7$	$-1.00x_8$	$-9.00x_9$
$x_{14}$	9.0	$+6.00x_1$	$+2.00x_2$	$+6.00x_3$	$-8.00x_4$	$+2.00x_5$	$+4.00x_6$	$+8.00x_7$	$-8.00x_8$	$-8.00x_9$
$z$	0.0	$-3.00x_1$	$+1.00x_2$	$-5.00x_3$	$+3.00x_4$		$-4.00x_6$	$-4.00x_7$	$-1.00x_8$	$-3.00x_9$

No initialization required -j Proceed to Optimize.

## 1 Optimization Phase Simplex

Starting Dictionary is:

$x_{10}$	19.0	$-4.00x_1$	$+8.00x_2$	$+5.00x_3$	$-5.00x_4$	$-7.00x_5$	$-9.00x_6$	$-5.00x_7$	$+3.00x_8$	$-6.00x_9$
$x_{11}$	34.0	$+6.00x_1$	$-10.00x_2$	$-5.00x_3$	$-10.00x_4$	$-2.00x_5$	$+7.00x_6$	$-10.00x_7$	$-3.00x_8$	$+2.00x_9$
$x_{12}$	25.0	$-10.00x_1$	$-3.00x_2$		$-5.00x_4$	$+7.00x_5$	$+2.00x_6$	$+8.00x_7$	$+6.00x_8$	$-1.00x_9$
$x_{13}$	51.0	$-10.00x_1$	$+5.00x_2$	$+1.00x_3$	$-8.00x_4$	$+3.00x_5$	$+8.00x_6$	$+9.00x_7$	$-1.00x_8$	$-9.00x_9$
$x_{14}$	9.0	$+6.00x_1$	$+2.00x_2$	$+6.00x_3$	$-8.00x_4$	$+2.00x_5$	$+4.00x_6$	$+8.00x_7$	$-8.00x_8$	$-8.00x_9$
$z$	0.0	$-3.00x_1$	$+1.00x_2$	$-5.00x_3$	$+3.00x_4$		$-4.00x_6$	$-4.00x_7$	$-1.00x_8$	$-3.00x_9$

$x_2$  enters and  $x_{11}$  leaves

$x_{10}$	46.2	$+0.80x_1$	$-0.80x_{11}$	$+1.00x_3$	$-13.00x_4$	$-8.60x_5$	$-3.40x_6$	$-13.00x_7$	$+0.60x_8$	$-4.40x_9$
$x_2$	3.4	$+0.60x_1$	$-0.10x_{11}$	$-0.50x_3$	$-1.00x_4$	$-0.20x_5$	$+0.70x_6$	$-1.00x_7$	$-0.30x_8$	$+0.20x_9$
$x_{12}$	14.8	$-11.80x_1$	$+0.30x_{11}$	$+1.50x_3$	$-2.00x_4$	$+7.60x_5$	$-0.10x_6$	$+11.00x_7$	$+6.90x_8$	$-1.60x_9$
$x_{13}$	68.0	$-7.00x_1$	$-0.50x_{11}$	$-1.50x_3$	$-13.00x_4$	$+2.00x_5$	$+11.50x_6$	$+4.00x_7$	$-2.50x_8$	$-8.00x_9$
$x_{14}$	15.8	$+7.20x_1$	$-0.20x_{11}$	$+5.00x_3$	$-10.00x_4$	$+1.60x_5$	$+5.40x_6$	$+6.00x_7$	$-8.60x_8$	$-7.60x_9$
$z$	3.4	$-2.40x_1$	$-0.10x_{11}$	$-5.50x_3$	$+2.00x_4$	$-0.20x_5$	$-3.30x_6$	$-5.00x_7$	$-1.30x_8$	$-2.80x_9$

$x_4$  enters and  $x_{14}$  leaves

$x_{10}$	25.66	$-8.56x_1$	$-0.54x_{11}$	$-5.50x_3$	$+1.30x_{14}$	$-10.68x_5$	$-10.42x_6$	$-20.80x_7$	$+11.78x_8$	$+5.48x_9$
$x_2$	1.82	$-0.12x_1$	$-0.08x_{11}$	$-1.00x_3$	$+0.10x_{14}$	$-0.36x_5$	$+0.16x_6$	$-1.60x_7$	$+0.56x_8$	$+0.96x_9$
$x_{12}$	11.64	$-13.24x_1$	$+0.34x_{11}$	$+0.50x_3$	$+0.20x_{14}$	$+7.28x_5$	$-1.18x_6$	$+9.80x_7$	$+8.62x_8$	$-0.08x_9$
$x_{13}$	47.46	$-16.36x_1$	$-0.24x_{11}$	$-8.00x_3$	$+1.30x_{14}$	$-0.08x_5$	$+4.48x_6$	$-3.80x_7$	$+8.68x_8$	$+1.88x_9$
$x_4$	1.58	$+0.72x_1$	$-0.02x_{11}$	$+0.50x_3$	$-0.10x_{14}$	$+0.16x_5$	$+0.54x_6$	$+0.60x_7$	$-0.86x_8$	$-0.76x_9$
$z$	6.56	$-0.96x_1$	$-0.14x_{11}$	$-4.50x_3$	$-0.20x_{14}$	$+0.12x_5$	$-2.22x_6$	$-3.80x_7$	$-3.02x_8$	$-4.32x_9$

$x_5$  enters and  $x_{10}$  leaves

$x_5$	2.40262172285	$-0.80x_1$	$-0.05x_{11}$	$-0.51x_3$	$+0.12x_{14}$	$-0.09x_{10}$	$-0.98x_6$	$-1.95x_7$	$+1.10x_8$	$+0.51x_9$
$x_2$	0.955056179775	$+0.17x_1$	$-0.06x_{11}$	$-0.81x_3$	$+0.06x_{14}$	$+0.03x_{10}$	$+0.51x_6$	$-0.90x_7$	$+0.16x_8$	$+0.78x_9$
$x_{12}$	29.1310861423	$-19.07x_1$	$-0.03x_{11}$	$-3.25x_3$	$+1.09x_{14}$	$-0.68x_{10}$	$-8.28x_6$	$-4.38x_7$	$+16.65x_8$	$+3.66x_9$
$x_{13}$	47.2677902622	$-16.30x_1$	$-0.24x_{11}$	$-7.96x_3$	$+1.29x_{14}$	$+0.01x_{10}$	$+4.56x_6$	$-3.64x_7$	$+8.59x_8$	$+1.84x_9$
$x_4$	1.96441947566	$+0.59x_1$	$-0.03x_{11}$	$+0.42x_3$	$-0.08x_{14}$	$-0.01x_{10}$	$+0.38x_6$	$+0.29x_7$	$-0.68x_8$	$-0.68x_9$
$z$	6.84831460674	$-1.06x_1$	$-0.15x_{11}$	$-4.56x_3$	$-0.19x_{14}$	$-0.01x_{10}$	$-2.34x_6$	$-4.03x_7$	$-2.89x_8$	$-4.26x_9$

Final Dictionary Solution: 6.84831460674 Num Pivots: 4